

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)	
)	
Review of Regulatory Requirements for)	CC Docket No. 01-337
Incumbent LEC Broadband)	
Telecommunications Services)	

BELLSOUTH COMMENTS

BELLSOUTH CORPORATION

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BellSouth Corporation, for itself and its wholly owned affiliated companies (collectively “BellSouth”), submits the following comments in response to the Common Carrier Bureau’s recent Notice of Proposed Rulemaking in the above referenced proceeding.¹

BellSouth commends the Commission in its recent efforts to establish a national policy for broadband. The disparate regulatory policies among the different broadband providers are not only harmful but also unjustifiable. Accordingly, the Commission must recognize all forms of competition in the broadband market and allow market forces, not regulation, to direct the market. As discussed in these comments, a broadband policy that rewards investment in facilities and allows providers to react to market conditions will help spur broadband deployment. A good first step in achieving this objective is to find incumbent local exchange carriers (“ILECs”), such as BellSouth, non-dominant in the provision of broadband services to

¹ *In the Matter of Review of Regulatory Requirements for Incumbent LEC Broadband Telecommunications Services*, cc Docket no. 01-337, *Notice of Proposed Rulemaking*, *Notice of Proposed Rulemaking*, FCC 01-360, (rel. Dec. 20, 2001) (“Notice”).

both the mass market and large business market² and to forbear from applying Title II regulation to these services.

I. Introduction and Executive Summary

*The widespread deployment of broadband infrastructure has become the central communications policy objective today. It is widely believed that ubiquitous broadband deployment will bring valuable new services to consumers, stimulate economic activity, improve national productivity, and advance many other worthy objectives – such as improving education, and advancing economic opportunity for more Americans. We share much of this view and intend to do our part in advancing reasonable and timely deployment. We will set out a comprehensive framework to give targeted attention to issues that affect broadband deployment.*³

Broadband is undoubtedly one of the most promising technological and economic stimuli of this new century. Indeed, some suggest that it can be the white knight savior for the entire United States economy.⁴ This promise, however, will never be realized under the current regulatory structure. Ignoring sound economic reasoning, the Commission of the past established a regulatory condition that is untenable. In spite of the abundant evidence of competition in the provision of broadband to consumers, it chose to single out one set of providers – ILECs – and saddle them with costly, burdensome regulations while leaving all other providers virtually regulation free. Of course, what would be expected to happen has happened – the unregulated providers now dominate the market. Even as market share continued to mass to

² BellSouth's Comments focus primarily on the provision of broadband service to the mass market. The Competitiveness of the large business market has long been established. Non-dominant treatment and forbearance should therefore apply to both markets.

³ Chairman Michael K. Powell, Press Conference (Oct. 23, 2001).

⁴ Robert W. Crandall and Charles L. Jackson, *The \$500 Billion Opportunity: The Potential Economic Benefit of Widespread Diffusion of Broadband Internet Access* (July 2001).

cable modem providers, the Commission of the past pushed for more regulation on the ILECs, while allowing the cable modem providers unfettered freedom to operate as they pleased. This disparate treatment has created a broadband market that is broken and is desperately in need of a fix.⁵

Looking to regulatory paradigms of the past, however, will not produce the solution. Indeed, that is the cause of the problem. Instead, the current Commission must recognize the realities of the broadband market. Broadband is an entirely different concept of communications that was not even considered when past regulation decisions and legislation were written to govern a circuit-switched network. Instead of analog signals being connected by direct circuits, bits of data are navigated through the network over packet switches and routers. The old circuit-switched network was built for voice traffic; broadband is a confluence of voice, video, and data. The only connection between the circuit-switched network of old and broadband is that they traverse some of the same wires. Any attempt to force broadband into a regulatory system designed for past circuit-switched networks is akin to trying to assemble an airplane using the instruction manual for a hang glider. The parts that aren't mentioned could be important.

Accordingly, this Commission should learn from the mistakes of the past and move to promote regulatory policies that will truly unleash broadband's potential. If the Commission truly shares the view of the capability of broadband to change our lives, as stated by Commissioner Powell, then it should do everything it can to ensure deployment in a timely and

⁵ See *Broadband: Bringing Home the Bits*, Committee on Broadband Last Mile Technology, National Research Council at A-2 (2001) ("*NRC Paper*") ("The present policy framework for broadband, which revolves around Telecommunications Act of 1996, is problematic and is unsuited in several respects to the new era of broadband services.")

cost effective manner. Such deployment will happen only if the Commission holds to certain underlying principles. First, the Commission must recognize broadband as a competitive market. Multiple forms of competition exist in broadband. Indeed, competition is more than existent; it is thriving. Cable modems, wireless, both fixed and satellite, and phone lines are all used by competing service providers to bring broadband to the consumer. Regulation is needed only as a surrogate for competition. When significant competition exists in a market, regulators should take a hands-off approach to regulation.

The evidence and level of competition has been documented in numerous studies, including the Commission's recently released *Third Report* on advanced services.⁶ In that report the Commission not only recognizes that numerous carriers are providing broadband over various modes, but that one provider, cable modem providers, doubles its next closest competitor in market share.⁷ Additionally, the report discusses many developing technologies that "have significant potential for expanding the availability of advanced telecommunications to more Americans."⁸ The report goes on to find that "emerging technologies continue to stimulate competition and create new alternatives and choices for consumers."⁹ With this amount of empirical evidence regarding competition, the Commission cannot in good faith continue to regulate one provider of broadband, ILECs, with a heavy hand while all other providers operate

⁶ *In the Matter of Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable And Timely Fashion, and Possible Steps To Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996*, CC Docket 98-146, Third Report, FCC 02-33 (rel. Feb. 6, 2002) ("*Third Report*").

⁷ *Third Report*, ¶¶ 44, 49. Cable modem providers have 5.2 million high speed lines while DSL providers have only 2.7 million lines.

⁸ *Id.*, ¶ 79.

⁹ *Id.*, ¶ 89.

with complete regulatory freedom. This not only will stifle investment by the ILECs but will also distort investment decisions across all technologies and firms to the detriment of consumers.

With competition flourishing as it is, the Commission has only two choices. It can either recognize broadband as a new concept, which cannot be forced into the regulatory policies of the past, and eliminate the antiquated regulation placed on ILECs by previous Commissions; or, it can continue the backwards-looking view of past Commissions and regulate the entire broadband market equally. Without question, however, the Commission cannot continue the asymmetrical regulation of today without seriously impairing the broadband market and the chance for rapid service deployment to all Americans. BellSouth is confident that this new Commission will act according to the statements that it has made in recent speeches, as quoted throughout these comments, and allow a competitive market to thrive without the destructive hindrance of regulation.

Second, the Commission must develop policies that create incentives for investment. Current regulations discourage investment not only for the ILECs but also for other competitors. Moreover, the threat of future regulation causes uncertainty and further undermines investment decisions. Limited deployment will occur across the entire broadband market unless the Commission reverses the past course of regulation regarding unbundling of ILEC broadband facilities. Clearly, this limited deployment will and has happened in the deployment of DSL services. Under the current rules ILECs must provide a high frequency portion of the local loop to a competitive local exchange carrier ("CLEC") to allow the CLEC to provide DSL to its

customer. Additionally, under certain conditions¹⁰ the ILEC must also unbundle its packet switch network if the ILEC has deployed a DSLAM at a remote terminal. Moreover, the past Commission initiated several proceedings that threaten to place even more onerous regulations on ILECs. For example, the Commission sought comments about whether ILECs should be required to unbundle the spectrum that flows over fiber optic cables. In addition, comments were requested on whether ILECs should be required to provide a combination platform of UNEs for data similar to the UNE-P for voice.¹¹ If either of these proposals were adopted, broadband deployment would be severely hampered.

Evidence of regulatory policies such as these bringing deployment to a standstill occurred when SBC attempted to deploy DSL-capable DLC line cards in remote terminals with its Project Pronto. While in the early stages of installation, the of the Illinois Commerce Commission (“ICC”) implemented rules requiring the unbundling DSL,¹² similar to the extensive rules being

¹⁰ The Commission established certain circumstances when an ILEC must unbundle its packet switching network elements including the digital subscriber line access multiplexer (“DSLAM”). The test to determine when unbundling must occur is set forth in paragraph 313 of the *UNE Remand Order*. See *In the Matter of Implementation of the Local Competition Provisions of the Telecommunications Act of 1996*, CC Docket No. 96-98, *Third Report and Order and Fourth Further Notice of Proposed Rulemaking*, 15 FCC Rcd 3696, 3838-39 (1999) (“*UNE Remand Order*”).

¹¹ See *In the Matter of Deployment of Wireline Services Offering Advanced Telecommunications Capability and Implementation of the Local Competition Provisions of the Telecommunications Act of 1996*, CC Docket Nos. 98-147 and 96-98, *Third Report and Order on Reconsideration in CC Docket No. 98-147, Fourth Report and Order on Reconsideration in CC Docket No. 96-98, Third Further Notice of Proposed Ruling in CC Docket No. 98-147 and Sixth Further Notice of Proposed Rulemaking in CC Docket No. 96-98*, 16 FCC Rcd 2101 (2001); *In re the Matters of Deployment of Wireline Services Offering Advanced Telecommunications Capability and Implementation of the Local Competition Provisions of the Telecommunications Act of 1996*, CC Docket Nos. 98-147 and 96-98, *Order on Reconsideration and Second Further Notice of Proposed Rulemaking in CC Docket No. 98-147 and Fifth Further Notice of Proposed Rulemaking in CC Docket No. 96-98*, 15 FCC Rcd 17806 (2000).

¹² See Professor Robert G. Harris, “Deployment of Broadband Networks and Advanced Telecommunications” (Dec. 19, 2001), attached as Exhibit 1, at 16 (“Harris Paper”). The ICC

currently contemplated by the Commission.¹³ Faced with the prospect of opening the investment to CLECs at prices below cost, the investment was no longer viable to SBC. Being forced to offer the facilities to its competitors at below cost prices practically insured SBC that it could not earn a return on its investment. In fact, it was doubtful that it could even recover the cost of its investment. Accordingly, SBC stopped further deployment. Chairman Powell shared the idea that carriers will not build facilities when it is doubtful that they will recover the cost of the investment when he stated:

We have to recognize that a supplier at the end of the day is going to do very little to fill the order if it does not have an economical way of doing so and getting paid. These suppliers are normally owned by public shareholders—you and me—and their first fiduciary duty is to serve the public, by maximizing the interests of that segment of the public that owns the company. In setting out our policy goals, we must simultaneously attempt to support an economic environment that will allow the supplier to get adequately compensated, or we will have many years of dissatisfaction because the supplier will rarely fully perform. In short, we must be much better at trying to pursue public policy objectives that align provider incentives, rather than act at cross-purposes with them.¹⁴

The same will be true for any ILEC placed in a similar situation, no matter whether the regulations are from the Commission or from state PSCs. Unless an adequate return can be obtained, deployment will not occur. If ILECs are economically forced to limit broadband facilities deployment, consumers will have fewer broadband choices. This limitation is increasingly magnified when considering deployment of next generation technology. Current

later amended its decision on DSL unbundling, however, “its decisions greatly heightened uncertainty associated with ILEC broadband investment.” *Id.*

¹³ See *supra*, note 9.

¹⁴ Chairman Michael K. Powell, Remarks at the National Summit on Broadband Deployment (Oct. 25, 2001).

technologies are in the infant stages of broadband development. DSL, for example, can provide up to 1.5 megabits per second (“mbps”) of data downstream with limited upstream capacity. While this is significantly better than 56 kilobit per second (“kbps”) transmission rate achieved over a dial up modem, it is far from what is predicted to be needed in the future. TechNet, a national network of senior executives of the nation's leading technology companies, has asked the “President and policymakers to make broadband a national priority and to set a goal of making an affordable 100-megabits per second broadband connection available to 100 million American homes and small businesses by 2010.”¹⁵ There are no technologies available today that will deliver that amount of capacity to the mass market. For ILECs, the ability to deliver that type of capacity is not presently achievable over a twisted copper pair transmission media, which is the media used to deliver service to its mass market customers. Instead, achieving that bandwidth capacity will probably require the use of fiber optic facilities, or the technological equivalent, to be placed into the home or business. Thus, the Commission must realize two important points regarding the provision of broadband facilities. First, ILECs and CLECs are on the exact same footing regarding these new facilities. ILECs, like CLECs, do not have a ubiquitous footprint of fiber optic facilities. In order to provide the broadband services expected for the future, ILECs and CLECs would be in the same position of having to deploy new facilities. For the investment reasons stated above and from a fairness standpoint, ILECs should not be required to unbundle these new facilities. Second, the Commission’s chief policy regarding broadband should be to encourage facilities-based competition. Unbundling of ILEC

¹⁵ See “A National Imperative: Universal Availability of Broadband by 2010”, TechNet, <http://www.technet.org/issues/updates//2002-01-15.69.phtml>, Executive Summary (“*TechNet Report*”).

facilities and offering them to CLECs at prices below the ILECs' cost will assure very limited deployment by both ILECs (because they will not take on the investment risk for themselves when they will have to share any upside potential with their competition) and CLECs (because they will not expend the capital but instead will wait until an ILEC deploys and shares its network). Consequently, consumers will have less choice in the broadband market. The only broadband providers will be those entities that can invest in facilities without the tedious burdens of regulation – cable modem companies and wireless companies. This is a point that Commissioner Abernathy emphasized in a recent speech:

Thus the goal of greater facilities-based local wireline competition means a shift away from policies that actively encourage complete resale as a long-term business strategy. Excessive unbundling obligations at TELRIC rates can present the same risks. Too much sharing destroys the investment incentives of both incumbents *and* CLECs: *Incumbents have little incentive to deploy new fiber to the curb, for example, if they will have to turn around and hand that fiber to their competitors at TELRIC rates. And CLECs will have little incentive to deploy their own networks when they can get access to incumbents' facilities at cost-based rates.*¹⁶

Commissioner Martin echoed this same sentiment:

Similarly, I believe the government – particularly the Commission – should place a higher priority on facilities-based deployment and competition. In the past, the Commission adopted a framework that may have discouraged facilities-based competition, allowing competitors to use every piece of the incumbents' network at super-efficient prices. *This regime creates significant disincentives for the deployment of new facilities that could be used to provide broadband. Under such a regime, new entrants have little incentive to build their own facilities, since they can use the incumbents' cheaper and more quickly. And incumbents have*

¹⁶ Commissioner Kathleen Q. Abernathy, PLI Conference Remarks (Dec. 13, 2001) (last italics added).

*some disincentive to build new facilities, since they must share them with all their competitors.*¹⁷

BellSouth is pleased that the Commission understands that past policies have been a hindrance more than a help for the build-out of broadband facilities. BellSouth is therefore encouraged that the current Commission understands the mistakes of the past and is confident that the Commission will eliminate the over-expansive and harmful rules related to broadband.

In spite of the overwhelming evidence of the harmful effects of unbundling on broadband deployment, CLECs will likely argue that more unbundling is needed. This is not surprising.¹⁸ They benefit greatly from receiving network elements at below cost. To paraphrase George Bernard Shaw, a regulatory policy that robs Peter to pay Paul can always depend on the support of Paul.

CLECs point to ILECs' continued deployment of DSL facilities and CLEC bankruptcies to suggest that further regulations are necessary for CLECs' survival and that such regulations will not deter further ILEC investment in broadband facilities. This of course is an overly simplistic view of the market and misses the most significant points regarding the CLECs' financial problems. The problems were the direct result of poor business plans. Even the CLECs acknowledge this fact. For example, Royce Holland, CEO of Allegiance,

described the CLEC shakeout as only natural – the result of the overheated capital markets of 1999 and early 2000. In those

¹⁷ Commissioner Kevin J. Martin, Remarks at the National Summit on Broadband Deployment (Oct. 26, 2001) (emphasis added).

¹⁸ The Commission must move beyond the CLECs' pejorative rhetoric that apparently knows no bounds. *See, e.g.*, comments of John Windhausen Jr., president of the Association for Local Telecommunications Services, discussing a fine levied against SBC. He said the Bell companies "are as bad as serial killers, they have become addicted to bad behavior." Telecommunications Reports 1/21/02. These types of caustic remarks have no place in any forum of intellectual debate on ILEC and CLEC issues.

days, there was 'no business plan too weak or management team too inexperienced to get funded,' he said.

. . .

Many companies were dragged down by an over-reliance on high-yield debt, Mr. Holland asserted. 'For a year or two, it was really easy to get high-yield debt... Over time, you'd see these balance sheets with high-yield debt [levels] three or four times higher than the market value of the company, he said. 'Anyone with that high a debt is in big trouble.'¹⁹

It is illusory for the CLECs now to suggest that the market woes they currently face are of someone else's doing. It is time for the CLECs, and the Commission, to realize the market is risky. As Chairman Powell stated "the marketplace can be a killer." It can "strangle bad business models . . . doing what regulators fear to do."²⁰ The Commission must not substitute its judgment for that of the market by favoring one provider of broadband service over another. Specifically, it must not allow one provider to ride the investment of another provider risk-free, especially considering the amount of competition that currently exists in the broadband market. This cannot possibly be the intent of Section 706 of the Telecommunications Act of 1996 (the "Act").

Moreover, the thought that ILECs will continue broadband deployment if current regulation is continued, or even if further regulation is adopted, is irrational. As discussed above, and as Commissioners Powell, Martin and Abernathy have stated agreement, no entity will continue to invest in facilities, taking on all the risk of such investment, only to provide that investment to one set of its competitors (who have none of the risk of investment) at prices

¹⁹ Telecommunications Report Daily, May 15, 2001.

²⁰ Communications Daily, March 8, 2001.

below cost. The CLECs' simple claims that ILECs have continued to invest even under the current regulations and therefore will continue to invest, even if more regulations are adopted, ignores the dynamics of the network and the market. ILECs have continued to deploy facilities to provide DSL because past business case analysis deemed it a viable risk; however, this was based on three very important factors. First, "the initial upgrades from an analog network to a digital network can be made relatively easily and inexpensively. The cost of that upgrade goes up dramatically, however, as one moves to the edges of the network."²¹ BellSouth has continued to deploy DSL where it can do so efficiently and economically. The current regulatory structure and the threat of new rules currently being considered by the Commission, however, has placed further deployment plans on hold. Second, capital market conditions have tightened significantly. As Harris discusses several analysts are predicting a switch from "emphasizing growth to corporate cash flows and earnings."²² As Harris states, "[e]ven if investment disincentives only reduce investment at the margin, they can substantially slow deployment and adoption because of the effect on (1) competitive dynamics and (2) network interdependencies between broadband availability and applications development"²³ Third, as demonstrated throughout these comments, over the last half of 2001 Commissioners were making very strong statements about the unfairness and disincentives in the broadband market. BellSouth took these statements as an indication that further regulation would not be forthcoming.

²¹ See Harris Paper at 16. For engineering purposes, which are discussed below, a DSLAM cannot always be placed in a central office but must be deployed closer to the customers' premises. DSL can be deployed much more efficiently and economically if the DSLAM can be installed at the central office. If it cannot, the cost of deployment rises because of DSLAM installation problems and the fact that the DSLAM will serve a smaller customer base.

²² Harris Paper at 16.

In summary, the Commission must use this proceeding as an opportunity to rid broadband of unnecessary regulation that slows deployment, and in the end harms consumers. The Commission's goal must be to develop a broadband policy that will incent deployment of broadband facilities on a widespread basis. This requires a fresh approach to the subject. The Commission cannot keep forcing antiquated regulatory policies on new technology. Facilities-based competition will produce the greatest benefits to consumers. Such facilities based competition will be limited under the current regulatory environment forced only on the ILECs. As Harris states,

Universal broadband access is an important long term objective, but attempts to reach this objective in the short-to-intermediate-run by "forcing" deployment, especially if targeted at one class of service providers, will be counter-productive. Rather, widespread broadband access can best be achieved through intermodal, facilities-based competition, which will stimulate the use of appropriate technologies under different circumstances (e.g., cable modems or DSL in cities and suburbs, WLANs on college campuses and office parks, satellite in rural areas).²⁴

The Commission must therefore implement its forbearance mandate and remove the regulatory restraints on ILECs and allow competition, not regulation, to control the broadband market. An important part of this broadband policy finding ILECs to be non-dominant in the provision of broadband services and forbearing from Title II regulation associated with these service.

²³ *Id.* at 17.

²⁴ Harris Paper at 12-13.

II. The Current Broadband Market

Before the Commission can adequately develop regulatory policies for the broadband market, it must first embrace the dynamics of the entire market including a definitional foundation.²⁵ The telephony network was developed to transport voice services over an analog signal. At the time of the network's initial development, the movement of data over these networks was in neither the engineer nor regulator's minds. Slowly the idea of data transport was introduced; however, such services were provided by converting an analog signal to a digital signal and sending it over the network for a specific purpose, e.g., a facsimile. With the advent of the Internet, digital transport and data took on a whole new meaning. Connecting to a site on the Internet no longer required a direct circuit link between the end-user and the computer site. Moreover, the information on the Internet site is downloaded to the end-user's computer. Thus, the faster this information can be transferred to the end-user, the better.

Although the telephony network was not originally designed to transport data, certain devices were implemented, such as analog modems, to allow an end-user to access the Internet via his or her analog voice grade phone line. Transport of data via analog modems over the phone line has been currently maximized to roughly 56 kbps. The Internet continued to grow with many Internet sites including larger and larger data files to be downloaded, meaning longer download times. The need-for-speed encouraged innovation by many entities seeking to transport data on behalf of the end-user. Telephony companies developed DSL services; cable

²⁵ As discussed later in these comments, Broadband has two discrete product markets – the provision of broadband services to the mass market and the provision of broadband services to the medium and large business market. *See infra*, Section IV. BellSouth believes that both of these markets are highly competitive and warrant deregulation. BellSouth's comments, however, focus on the mass market.

companies developed cable modems; and wireless companies developed facilities to transport data over wireless spectrum. This “digital convergence” – moving from analog to digital and the expansion of high-speed access providers – has created a broadband market that consists of numerous competitors over various modes.²⁶ Digital convergence and intermodal competition have transitioned broadband beyond the traditional regulatory thoughts and definitions previously ascribed to telecommunications.

Chairman Powell acknowledged this point stating, “broadband is not a speed. It is a medium that offers a wide potential set of applications and uses. . . . I also believe that we should conceptualize broadband capability as a function that can ride on many different electronic platforms.”²⁷ BellSouth whole-heartedly agrees with the Chairman. Broadband is not limited to any specific technology, speed, or provider. Instead, broadband must be viewed in terms of:

any network or technology that is built or modified to carry digital data traffic and provides end-users with always-on access to one or more data networks.”²⁸ In short hand, “broadband” equals “digital data,” where data can be used to carry an enormous range of information—words, numbers, voice, audio, pictures, video, etc. The distinguishing characteristic of digital data networks is that they enable digital devices to speak to each other in their own language.²⁹

²⁶ See Harris Paper at 3.

²⁷ Powell Remarks (Oct. 25, 2001).

²⁸ “It is conceivable that there may develop broadband digital access that is not always-on, so that should not be considered a necessary element of the broadband definition, even though broadband access is typically always-on.”

²⁹ Harris Paper at 4.

Pursuant to this definition, several entities provide broadband services to consumers. Indeed, the ability to deliver such services transcends all existing modes of delivery. The Commission merely needs to look at the current market to see competitiveness of the market today. This well established competition is entrenched in the market and will only continue to grow.

A. Regulatory Framework of Broadband Providers

Because broadband crosses conventional industry and regulatory lines, market participants currently face disparate levels of regulation, but for no rational reason. As the Commission has already acknowledged,³⁰ no entrant dominates the broadband market, thus no class of competitors should be subject to arduous regulation designed to protect against an abuse of market power. ILECs are not incumbents in the broadband market and they do not have market power. An ILEC's ownership of local exchange facilities awards it no significant competitive advantage in providing broadband, particularly as its local exchange facilities are subject to mandatory unbundling and resale obligations.

³⁰ See *In the Matter of Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996*, CC Docket No. 98-146, Report, 14 FCC Rcd 2398 (1999) ("First Report"); *In the Matter of Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996*, CC Docket No. 98-146, Second Report, 15 FCC Rcd 20913, (2000) ("Second Report"); see also *In the Matter of Rulemaking To Amend Parts 1, 2, 21 and 25 of the Commission's Rules to Redesignate The 27.5-29.5 GHz Frequency Band, To Reallocate the 29.5-30.0 GHz Frequency Band, To Establish Rules and Policies for Local Multipoint Distribution Service And for Fixed Satellite Services*, CC Docket No. 92-297, Second Report and Order, Order on Reconsideration, and Fifth Notice of Proposed Rulemaking, 12 FCC Rcd 12545 (1997) ("LMDS Order").

In the mass market, for example, the cable industry, not the ILECs, enjoys the greatest share of broadband services provided to the mass market.³¹ Cable modem dominance will likely continue as it has in past years. Subjecting ILECs – or any broadband suppliers, for that matter – to cumbersome regulatory requirements for broadband is unnecessary and only thwarts their full participation in the market, inhibits their incentive to develop innovative service offerings, encumbers their ability to respond to shifting market conditions, and ultimately delays widescale deployment and increases the cost of broadband for consumers.

A comparison of the regulations placed on ILECs as compared to cable modem providers, the leading provider of mass market broadband services, best illustrates the unfair regulatory burdens shouldered by the ILECs. The economic similarities of ILECs and cable companies are significant. The services that ILECs and cable modem providers are marketing are both directed toward the mass market. Each has an existing customer base and an existing network. Both are new entrants into the broadband market and therefore neither is dominant, even though cable modem providers have a clear lead on the number of customers. Both have made large investments in their networks and have considerable resources to devote to deployment.

With these striking similarities one would assume that these entities would be allowed to compete on a level regulatory playing field. Nothing could be further from the truth, however. The regulatory disparities are stark and overwhelming. ILECs are prohibited from providing broadband across a LATA boundary; cable modem providers are not. Many ILEC services are subject to price regulation. ILECs must file tariffs with the Commission to establish the rates,

³¹ See discussion at IV. C.

terms, and conditions under which they deal with their customers; cable modem providers do not. ILECs must, under certain circumstances, unbundle their network for competitors to use to provide broadband; cable modem providers bear no such obligation. ILECs must allow competitors to collocate on their premises; again, cable modem providers bear no such obligation. ILECs must allow access to the loop facilities on a shared basis with their competitors; cable modem providers do not. Many of these same regulatory inconsistencies exist between ILECs and other broadband providers as well. Indeed, it is clear that regulation is favoring certain technology and providers over others and in the process leading to a potentially large inefficiency in the market's allocation of resources.

All of these hodgepodge policies and regulations regarding broadband lead to one inevitable conclusion – uncertainty in the market. And, uncertainty is strangling the market of much needed investment dollars and application providers. As Commissioner Martin stated, “Regulatory uncertainty and delay function as entry barriers, limiting investment and impeding deployment of new services. We should work to be faster and more reliable in our decision making.”³² Uncertainty and an ever-increasing probability of greater regulation has stagnated investment dollars from pouring into the market. Moreover, this lack of investment dollars has an already risky application provider market completely on edge. These two ingredients have further aggravated the “chicken and egg” problem that exists in the broadband market today. Some speculate that the widespread deployment of broadband will not occur unless and until application providers develop “killer apps” that will run effectively only over broadband. Only then will consumers be motivated to obtain broadband, which in turn will motivate full

³² Commissioner Martin Remarks (Oct. 26, 2001).

deployment. Others speculate that application providers will have no incentive to spend the investment dollars necessary to chase after the next great application until a ready broadband mass market is available to receive it.³³ Regardless of which theory is correct, there can be no doubt that regulatory uncertainty has only exacerbated the problem.³⁴

It is not an oversimplification of the problem to state that the answer to removing regulatory uncertainty in the market begins with policy makers realizing and embracing the unmistakable fact that broadband is a competitive market with multiple providers and none of these providers should face differing regulatory treatment.³⁵ Accepting and embracing these facts will produce policies that strengthen broadband deployment by allowing the market, not regulators, to determine winners and losers. Unless these facts are acknowledged, retreading broadband through the same old regulatory models may change the wrapping but not the contents of the package. Moreover, embracing these facts will shift thinking about broadband and produce a new regulatory paradigm – one with a deregulatory focus – that will allow for the explosion of broadband growth.

³³ See *NRC Paper* at S-4. (“an application will not be made available until a critical fraction of subscribers receives a high enough level of performance to support it, yet service providers will not deploy higher-performance broadband until there is sufficient demand for it. The performance of a broadband service, should therefore, be good enough and improve sufficiently to facilitate this cycle and not impede it.”).

³⁴ See *Harris Paper*, § 4.4, discussing market uncertainty.

³⁵ BellSouth realizes that any market inherently contains risks and uncertainties that can never be completely eliminated. The uncertainty caused by imprudent regulation, however, can and should be eliminated from any market.

B. The Commission Cannot Continue to Justify the Current Regulatory Framework Given Competition

Therefore, the Commission must evaluate the evidence and use this proceeding as an opportunity to rid broadband of unnecessary regulation that slows deployment and in the end harms consumers. As Chairman Powell has stated:

I am the first to admit that deregulation for its own sake is not responsible policy. *What is good policy is to carefully examine rules to determine if they are actually achieving their stated purposes, or if, instead, they are, in fact, denying consumers value by impeding efficient market developments that these consumers would welcome.* Regulations are not innocuous simply because they are promulgated in the name of consumers. No matter how worthy the purpose, rules that constrain markets can, in fact, deny or delay benefits to the consuming public. There are many examples of deregulations by the Commission that were met with fierce claims that consumers would suffer as a result. When the deed was done, however, we often witnessed instead, the flourishing of innovation and competition, from which consumers benefited magnificently.³⁶

The benefit to consumers is palpable. It is undebatable that consumers benefit greatly when the supply for a product is increased. For the reasons stated throughout these comments, the rules implemented by the Commission, and those that are being contemplated in open proceedings, are encumbering broadband supply. Such encumbrance is hindering broadband market development and in turn denying consumers current benefits, but more importantly, future benefits, as many broadband investments will never be made.

³⁶ Chairman Michael K. Powell, Remarks Before the Federal communications Bar Association (June 21, 2001) (emphasis added).

III. The End Game Must be to Implement Policies that will Incent Facilities-Based Deployment, Now and in the Future

A. Regulation Acts as a Disincentive for Broadband Facilities-Based Competition

Deployment of network equipment necessary to provide broadband is extremely costly. As with any investment, risk and reward determine the willingness of a carrier to commit capital resources to innovative network equipment. Requiring ILECs to open their investment, through unbundling, to other carriers shifts the substantial investment risk from entrant to the ILECs, which has a stifling effect on ILECS investments.³⁷ If ILECs are forced to unbundle their network investment in a nascent market to other carriers, they may simply choose not to invest. The limited rewards will not justify the investment.³⁸ As Commissioner Abernathy stated:

*The prior Commission, in my view, was overly focused on the anticipated benefits of unbundling, without considering the costs. Unless properly circumscribed, forced unbundling can impose costs and distort investment incentives. Unbundling requirements that are too broad destroy an incumbent's incentive to invest in facilities. This is because incumbents will avoid risking capital on new infrastructure if rivals can piggy-back on their facilities risk-free. By the same token, new entrants will have diminished incentives to invest in their own facilities if the incumbent's network is readily available at below cost rates. Obviously, pricing is key: If TELRIC rates turn out to be set below realistic cost estimates – which the Supreme Court will soon tell us – then the distortion of investment incentives are significant.*³⁹

³⁷ See Harris Paper, § 4, discussing disincentives for investment in the broadband market.

³⁸ See, e.g., C. Michael Armstrong, *Telecom and Cable TV: Shared Prospects for the Communications Future*, delivered to the Washington Metropolitan Cable Club (Nov. 2, 1998) available at <<www.att.com/speeches/98/981102.maa.html. (“No company will invest billions of dollars . . . if competitors who have not invested a penny of capital nor taken an ounce of risk can come along and get a free ride on the investments and risks of others.”)

³⁹ Commissioner Kathleen Q. Abernathy, Remarks at USTA Annual Convention (Oct. 7, 2001) (first emphasis added).

The Commission must therefore stop forcing voice regulations around broadband services and implement regulatory policy that recognizes the effects unbundling has on investment and innovation in broadband. There are important differences between the effects of unbundling elements used to provide traditional voice telecommunications services and the effects of unbundling new investment used to provide broadband. The risk associated with high technology deployment is greater than that required to deliver traditional services. This technology is rapidly evolving and equipment can quickly become obsolete. Additionally, ILECs face stiff competition from other broadband providers.

In fact, the Commission has even acknowledged, “investments in facilities used to provide service to nascent markets are inherently more risky than investments in well established markets. Customer demand for advanced services is also more difficult to predict accurately than is the demand for well established services”⁴⁰ An important part of the Commission’s reasoning to not unbundle broadband equipment in the past, even though traditional services equipment had been unbundled, was to avoid stifling competition and to encourage innovation.⁴¹ This fact remains all the more relevant today.

Clearly, current regulatory policies coupled with the threat of even more unfavorable regulation is having a chilling effect on ILECs’ incentives to invest in broadband technologies. Moreover, such policies also negatively affect CLEC investment in their own facilities. CLECs will not have any incentive to invest in equipment to provide broadband if they can ride the

⁴⁰ *UNE Remand Order*, 15 FCC Rcd at 3839, ¶ 314.

⁴¹ *Id.* at 3840, ¶ 316. *See also*, Commissioner Abernathy Speech at the competition Policy Institute Forum (December 7, 2001), “[t]he FCC appropriately recognized the risk of over-regulation when it declined to force the unbundling of packet switches.”

backs of, and shift investment risks to, the ILECs. As Kenneth Ferree, Chairman of the Cable Services Bureau said, “[i]ndeed, it’s not entirely clear what the advantage of building a network is if it always is possible to use someone else’s. And, . . . the ‘someone else’ that you are expecting to build the network might never come along because of the lack of an economic return on the investment in new facilities.”⁴²

“The [Commission, therefore,] should do its part to remove the requirements that [ILECs] lease network pieces to competitors at super-efficient prices, which discourage both incumbent investment and facilities-based competition.”⁴³ If the investment disincentives of the existing, as well as possible additional, broadband policies continue, new investment in broadband facilities will be eschewed.

B. Evidence of the Disincentive Effect Regulation has on Investment

The deterring effect regulation, particularly unbundling, has on investment decisions of ILECs is unquestionable. “As a matter of economic principles and empirical observation, there can be no doubt that increasing the risks and uncertainties associated with investments decreases incentives to invest. This is especially true of large-scale investments in durable assets, such as investments to extend DSL capabilities into wireline networks.”⁴⁴ Indeed, BellSouth has experienced first hand changes in the investment decisions based on the unfavorable impact of regulations. ⁴⁵ BellSouth currently has a broadband investment decision on hold waiting the

⁴² W. Kenneth Ferree, Chief of Cable Services Bureau, Broadband Outlook 2002 Conference.

⁴³ Commissioner Kevin J. Martin, Remarks at the SUPERnet Conference (Jan. 23, 2002).

⁴⁴ *Harris Paper* at 20.

⁴⁵ *See Id.* (“Adding regulatory requirements that increase the cost for the incumbent and/or artificially reduce the cost to competitors will dampen ILEC investment in DSL facilities. Even

outcome of several regulatory, both federal and state, proceedings.⁴⁶ If the Commission imposes further regulations on broadband deployment, BellSouth will abandon these particular deployment plans.⁴⁷ BellSouth has steadily deployed DSL capability in many areas within its region. Much of that deployment, however, occurred in areas that included adequate space to locate new equipment and required the least amount of re-engineering of the network. For example, as discussed previously, placing a DSLAM in a central office is more deployment-friendly because space concerns are not usually a problem. Conversely, deployment of a DSLAM in a remote terminal is significantly more challenging.⁴⁸ Often, such deployment requires that a new environmentally protected cabinet be installed to house the DSLAM. BellSouth has deployed remote terminal DSLAMs in some cases. In other instances, the cost of such an investment or limited easement space at the remote terminal makes deployment cost prohibitive. Many of the customers in areas in which it is not practical for BellSouth to deploy

minimal unbundling requirements increase risk and uncertainty, making DSL investments less attractive. Extensive unbundling dramatically decreases ILEC control over its assets and increases the degree of uncertainty associated with its investments.”)

⁴⁶ Regulatory uncertainty can sometimes be just as stagnating on investment as unwise decisions. As Commissioner Martin stated, “[r]egulatory uncertainty and delay function as entry barriers, limiting investment and impeding deployment of new services. We should work to be faster and more reliable in our decisionmaking.” Remarks at National Summit on Broadband Deployment (Oct. 26, 2001) .

⁴⁷ Even if the Commission takes a deregulatory approach to broadband, the ILECs must also navigate between several state PSCs. BellSouth will analyze this broadband deployment decision on a state-by-state basis. The Commission should encourage states to forbear from broadband regulation.

⁴⁸ ILECs have engineered their networks to take advantage of multiplexing capabilities. A multiplexer allows many signals from various loops to be aggregated onto one large transmission path, such as fiber. This avoids having to run a copper loop from every customer’s premises to a serving wire center. A digital loop carrier (“DLC”) system utilizes a link, typically fiber, from the serving wire center to a remote terminal (“feeder”). Copper loops are then distributed from the remote terminal to the customer premises (“distribution”). DSL is a copper based technology; thus, to deploy DSL to a customer served by a remote terminal, the DSLAM must be collocated at the remote terminal in order to access the copper loop.

DSLAMs, however, still have the opportunity to be served by BellSouth's competitors such as cable modem providers or wireless providers. If BellSouth wants to compete for such customers, some other solution must be used.

One such alternative solution has been referred to as the "integrated solution." BellSouth has worked with a vendor to develop an integrated solution. This solution uses line cards that can be installed in many of BellSouth's DLC systems, within the remote terminal, that will allow the DSL service to be provided over the DLC from the customer's premises to the serving wire center.⁴⁹ The biggest potential advantage of an integrated DSL solution relative to an overlay solution, *i.e.*, remotely installed DSLAM, is that capital can scale much more directly with service penetration. A remote DSLAM requires dedicated real estate and its own environmental and power infrastructure. A significant capital outlay⁵⁰ is necessary before a single line of DSL can be provisioned. An integrated solution can reduce the initial investment to less than \$10,000. Although this cost advantage can be significantly diminished by higher line card costs,⁵¹ at low take rates and in small-scale deployments it offers a significant advantage in capital efficiency.

⁴⁹ The technical design of the line card approach involves two circuit packs for use in one type of BellSouth's DLC system. A dual POTS/ADSL line card, placed in a card slot usually occupied by a POTS-only card, provides for both switched voice and broadband data. ATM cell multiplexing and high-speed transport are enabled on a second card which replaces – and incorporates the functionality of – a remote test common equipment card. The line cards are interconnected to the cell multiplexer through otherwise unused backplane wiring. The DLC system in which this solution is used is a narrowband multiplexer, limited to 64 kilobits per second ("kbs") throughput in each channel slot. Use of the system for digital access at beyond this rate was neither designed nor envisioned. This solution, nevertheless, is able to identify and exploit backplane resources on the platform to enable per-slot interconnection at rates up to 10 megabits per second ("mbps").

⁵⁰ Depending on the circumstances, a remote DSLAM can cost between \$30,000 and \$100,000.

⁵¹ As the number of subscribers increases, the integrated line card costs likewise increase. At some point the integrated line card costs will begin to exceed the cost of deploying a separate DSLAM and cabinet.

With the implementation of this integrated solution, DSL service could potentially be provided to over 4,300,000 lines that are served by remote terminals. Many of these remote terminals are located in rural areas and serve fewer than 100 customers each. Based on BellSouth's business analysis, an integrated solution would yield little margin, but, assuming no new regulatory burdens are placed on ILECs, BellSouth plans to expend significant resources to operationalize this integrated solution in BellSouth's serving area. The plan is to deploy it in many locations where overlay solutions are not cost effective, particularly in rural locations where it would be BellSouth's only viable means of competing with other broadband providers. This plan, if implemented, would expand overall broadband coverage to as much as 80% of BellSouth's subscriber base. Much of the increase would be in the more rural parts of BellSouth's territory. As stated, the business case predicts slim margins assuming the current regulatory environment. Under the current regulatory environment BellSouth is not required to unbundle line cards or packet switching, nor is it required to collocate a competitor's line cards⁵² within its DLC system. Required unbundling of line cards or packet switching or collocation of

⁵² The Commission has requested comments on whether it should require ILECs to collocate competitors' line cards within the ILECs' remote terminal. This concept has been advanced by some CLECs as the most reasonable way for them to provide DSL service out of remotes, thus providing the additional opportunity for them to provide broadband functionality that the CLECs allege ILECs "have refused to provide." This is discussed as if the line card alone will magically enable broadband, and at little or no cost to the owner of the DLC. The reality is that broadband is enabled only when it is connected to the cell multiplexing and transport function, and interconnected into the packet network. That infrastructure is shared by all of the line cards so connected. The relative costs of that sharing are dependent upon the number of line cards in use and on the bandwidth consumed by each. The latter depends not only upon the DSL line speed achieved, but also upon the priority assigned to carry traffic. Given the expressed desires of CLECs to have bandwidth dedicated to their needs in such an environment, costs attributed to their bandwidth usage would likely be much greater than that of ILEC customers, all of whom are served on a best effort basis. BellSouth is highly skeptical of regulators being able to adequately allocate such costs and BellSouth is certain that recovery under TELRIC cost methodology would make the project economically infeasible.

line cards, at TELRIC pricing, would strain these margins beyond viability. In such an instance BellSouth would simply abort its plans of deployment of the integrated solution.

The Commission has stabilized the traditional local services market by providing clarity to the elements that are subject to unbundling, *e.g.*, traditional loops, sub-loops, ports, and switching, etc. Policies that eliminate regulation and allow an already competitive market to control would likewise bring stability to the broadband market by determining with equal clarity that investment in new broadband technology will not be unbundled. This will give all carriers the confidence to deploy new technology to make broadband available to more end-users. This confidence will stimulate investment and result in more Americans having access to broadband.

C. Current Technologies are Only the Beginning, Not the End, of Broadband

While regulation certainly impacts current investment decisions, as the above discussion demonstrates, the greatest threat it imposes is on future technologies. No one doubts the impact that broadband access could have on the future.⁵³ Its potential to bring life altering resources and applications to everyone is well chronicled in these comments.⁵⁴ The speeds available by broadband to the mass market today, however, are already considered by many to be slow. TechNet, the entity that seeks to have 100 mbps broadband connection to 100 million American homes by 2010, believes, “[a]pplications that will likely revolutionize how consumers use the

⁵³ *TechNet Report*, Executive Summary. (“The benefits [generated by the widespread adoption of broadband] to quality of life are immeasurable.”).

⁵⁴ *See id. at 4*, (“Broadband will spur new applications, making the Internet a more significant and powerful part of the lives of Americans at home, work and play, and creating unlimited new business opportunities.”)

Internet and spur consumer demand will require speeds of at least 6 mbps.”⁵⁵ TechNet recognizes that current broadband deployment provides connections at “relatively slow transmission speeds [typically 400 kbps or less],” however sees this as “a foundation for the achievement of an ambitious interim broadband deployment goal” of “speeds of at least 6 mbps from two or more providers to at least 50 percent of U.S. households and small businesses by 2004.” TechNet believes that cable modems providers “may be best positioned to meet an aggressive deployment goal, primarily because the hybrid-fiber coaxial cable that characterizes much of the network can accommodate significant broadband data capacity.”⁵⁶ It adds, “with aggressive investment, however, DSL deployment can also reach these goals.”⁵⁷

Thus, to merely obtain the speeds that TechNet contends are necessary to stimulate broadband demand will require significant investment by DSL providers. Moreover, TechNet contends that to reach the goal of 100 mbps to 100 million homes and small businesses “will require network providers to invest hundreds of billions of dollars to upgrade infrastructures and increase bandwidth capacity to the last mile, primarily by providing new fiber connections to homes and offices. Today, virtually no American homes have connections with such bandwidth.”⁵⁸

Clearly, broadband, while progressing, remains in its infant stages. No one who speaks of the life-changing opportunities available through broadband believes that such changes will occur with the relatively slow average connection speeds of 400 kbps. Their vision is based on

⁵⁵ *TechNet Report* at 6.

⁵⁶ *Id.* at 7.

⁵⁷ *Id.*

⁵⁸ *Id.*

speeds that can deliver videoconferencing to change the way we think of working and the need for travel and centralized offices; or, videoconferencing to allow doctors to collaborate with specialists around the world, thus eliminating the patient's need to endure painful travel. These kinds of changes will require the connection speeds TechNet envisions and the billions of dollars of investment it recognizes will be necessary to make those speeds possible.

Whether this dream will ever be realized rests in large part with the Commission. As demonstrated above, no investor will incur all the risks and spend billions of dollars on infrastructure that will then be turned over to one of its competitors at below cost pricing. If the Commission continues to require the unbundling of broadband network elements, it will be effectively telling the ILECs "we do not want you in the broadband market, we are reserving that market for your competitors." Closing the market to one competitor not only unfairly punishes that competitor but also consumers because it limits their choice and thus, increases price and delays availability. The Commission must therefore follow the advice of analysts, technology companies, and the words from the individual Commissioners' own speeches and deregulate broadband.

IV. In Order for Broadband to Achieve its True Potential, the Commission Must Remove the Stifling Effects of Regulation

The *Notice* requests comments about the current level of regulation and whether changes should be made. Particularly, the *Notice* seeks comments on defining the relevant and geographic markets for broadband. The *Notice* asks whether SBC's definition, as set forth in its petition asking that it be declared non-dominant in the provision of broadband services, is appropriate. The *Notice* also asks whether ILECs should be declared non-dominant in the

provision of broadband services. Additionally, the *Notice* asks a series of questions regarding what deregulatory steps can be taken by the Commission “to foster increased broadband deployment and competition among providers of broadband services.”⁵⁹ BellSouth has stressed the importance of deregulation throughout these comments and is hopeful the Commission will follow the leanings of the Commissioners’ statements and work toward scaled back regulation as BellSouth proposes below.

A. Relevant Product and Relevant Geographic Market for Broadband Services

BellSouth agrees with the relevant product market and geographic markets defined by SBC in its petition for non-dominant treatment in the provision of broadband services.⁶⁰ SBC establishes that the provision of broadband services to the mass market is a discrete product market without relevant sub-markets. Broadband services to the mass-market are cable modem service, DSL, and wireless, including mobile, fixed wireless and satellite. Likewise, broadband services provided to large business customers represent a discrete market without relevant sub-markets. Services in the large business broadband market include Asynchronous Transfer Mode (“ATM”) service, Frame Relay service, and Gigabit Ethernet. BellSouth believes these product markets are the proper markets for the Commission to analyze market dominance. Additionally, BellSouth supports SBC’s position that an ILEC’s in-region territory is the relevant geographic market. In the following analysis, BellSouth focuses on the mass market. The competitiveness

⁵⁹ *Notice*, ¶ 34.

⁶⁰ SBC Petition For Expedited Ruling That It is Non-Dominant In Its Provision Of Advanced Services And For Forbearance From Dominant Carrier Regulation Of Those Services, filed October 3, 2001 (“*SBC Petition*”).

of the large business market has long been established. All regulatory relief and forbearance should therefore apply to both product markets.

B. ILECs are Non-Dominant in the Provision of Broadband Services

The Commission should assess the competitive potential of broadband, and the corresponding ability of any firm to exercise market power in that market, by using its familiar approach of first identifying the market and its participants and then analyzing factors such as relative market shares, demand elasticity and supply elasticity of the market, and the cost structure, size and resources of the entrants.⁶¹ A competitive market is characterized by high demand and supply elasticities and several participants, none of which has an unfair size or market share advantage.⁶² The Commission need not detect a perfectly competitive market to find regulation unwarranted, only one in which no firm possesses or can unilaterally exercise market power.⁶³ The mass market and large business market for broadband services are abundant with competition. No firm is dominant or has the ability to exercise market power in either case. The broadband market is therefore ripe for deregulation.

⁶¹ See *In the Matter of Motion of AT&T Corp. to be Reclassified as a Non-Dominant Carrier*, 11 FCC Rcd 3271, 3293, ¶ 38 (1995) (“*AT&T Non-Dominance Order*”); *In the Matter of Comsat Corporation Petition Pursuant to Section 10(c) of the Communications Act of 1934, as amended, for Forbearance from Dominant Carrier Regulation and for Reclassification as a Non-Dominant Carrier, et. al*, File No. 60-SAT-ISP-97, *Order and Notice of Proposed Rulemaking*, 13 FCC Rcd 14083, 14098, 14110-11, 14118, ¶¶ 24, 50, 66 (1998) at 3293; (“*Comsat Order*”).

⁶² *AT&T Non-Dominance Order*, 11 FCC Red at 3293, ¶ 38.

⁶³ *Id.* at 3292.

C. The Mass Market

1. There is Ample Competition in the Provision of Broadband Services to the Mass Market

Scores of providers have entered or are poised to enter the rapidly growing market for broadband services. In particular, numerous entrants in BellSouth's territory, deploying a variety of technologies, are formidable competitors in the broadband arena.

a. Cable Modem Dominance

By far, the fastest spreading broadband technology today is cable. Backed by the vast financial resources of the major cable multiple system operators ("MSOs"), cable companies have transformed their cable networks into hybrid fiber-coaxial cable networks that deliver broadband to the mass market, where they can leverage their high multichannel video program distribution ("MVPD") penetration rates. Embedded cable infrastructure now passes 97.1 percent, and serves 64.4 percent, of homes in the United States.⁶⁴ With cable plant passing nearly every home in the country, cable operators are uniquely positioned to offer, and have been vigorously rolling out, a high-bandwidth cable modem solution that completes the local loop for data services.⁶⁵

⁶⁴ See *In the Matter of Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming*, CS Docket No. 01-129, *Eighth Annual Report*, FCC 01-389 ¶¶ 17-18 (rel. Jan. 14, 2002), ("2001 MVPD Competition Report").

⁶⁵ See *2001 MVPD Competition Report*, ¶ 11 ("Virtually all of the major MSOs offer Internet access via cable modems in portions of their service areas.").

In the mass market for broadband services, cable modem providers “have used provisioning [of their networks] to gain an advantage over their competitors, one that they will not likely relinquish anytime soon.”⁶⁶ As one industry analyst noted,

[i]n terms of a subscriber base, cable modem is the leading broadband connection technology in the United States. AT&T, AOL Time Warner, Comcast, Charter, Cox, Adelphia, and Cablevision have connected close to 95% of current cable modem subscribers. . . . Around 50% of U.S. households had cable modem service available at year-end 2000. It is forecasted that by year-end 2005, cable modem availability will have grown to approximately 83% of U.S. households.⁶⁷

This availability has translated into a dominant customer base for cable modem providers. “At the end of the second quarter of 2001, approximately 5.5 million households in the United States subscribed to cable modem service. . . . which relates to a five percent penetration rate increase over the preceding year”⁶⁸ This is compared to only 2.5 million DSL subscribers and 100,000 broadband satellite subscribers for the same period.⁶⁹ Analysts predict that the total number of cable modem subscribers will reach 15.7 million by the end of 2005 compared to 10.5 million

⁶⁶ The Yankee Group, *Residential Broadband: Provisioning Cable Modem Service*, Vol. 5, Issue 4 (Oct. 18, 2001). “Broadband provisioning is composed of two basic components: network provisioning and customer-premises provisioning.” *Id.*

⁶⁷ The Yankee Group Report, *Broadband Access Technology: Whose Number Is Up?* Vol. 2, Issue 10 (Sept. 19, 2001). This is by accounts a conservative estimate. Indeed, “[o]ne analyst predicts that by 2003 investment spending is expected to result in the upgrade of substantially all of the U.S. cable infrastructure (more than 99.9 million homes) to enable the delivery of new bandwidth-intensive services.” *Third Report*, ¶ 65.

⁶⁸ The Yankee Group (Oct. 18, 2001). *See also*, *Third Report*, ¶44. This equals approximately 54 percent of total high-speed lines.

⁶⁹ The Yankee Group (Oct. 18, 2001). *See also*, *Third Report*, ¶ 46, n. 98. (Analysts “estimate that cable modem service would reach 66 percent of U.S. households at the end of 2001, (compared with 45 percent for DSL service).”)

DSL subscribers, and 4.5 million satellite broadband subscribers.⁷⁰ These market share projections amply demonstrate that cable modems, not ILEC DSL offerings, have the controlling share of today's broadband services in the mass market and will continue this controlling share for the foreseeable future.

Significantly, cable companies are accomplishing this impressive rollout without any regulatory impediments. Cable modem service has never been subject to regulation under Title II, nor has the Commission subjected cable modems to regulation as local exchange service. Moreover, cable companies can freely bundle video, voice and data services into integrated "one-stop shopping" offerings, which gives them a significant edge over ILECs in serving the mass market.⁷¹ Freedom from regulation is evident in the amount of capital expended and available to cable modem operators. For example, "[i]n 2000, the cable industry spent a total of \$15.5 billion on the construction of new plant, upgrades, rebuilds, new equipment, and maintenance of new and existing equipment. This represents a 45.9 percent increase over the \$10.6 billion spent in 1999."⁷²

Other factors indicate that cable modem service could easily out-distance other broadband competitions. As the Yankee Group stated,

Effectively provisioning their network infrastructure and customer premises has provided cable operators with the

⁷⁰ The Yankee Group (Oct. 18, 2001).

⁷¹ See *2001 MVPD Competition Report*, ¶ 34 ("Advanced services continue to be deployed at a rapid pace. With most systems able to deliver digital video, and many systems able to deliver cable modem and/or cable telephone service, MSOs are beginning to experiment with the deployment of other advanced service offerings such as video-on-demand ("VOD") and Internet protocol ("IP") telephony over cable systems.")

⁷² *Third Report*, ¶ 65.

following advantages in building and maintaining this lead:

- **First to market with residential high-speed Internet access.** Cable operators launched residential cable modem service often one and a half to two years before competitive DSL offerings.
- **Cable modem service has greater availability.** More than half of U.S. households have access to cable modem service as compared to more than one third of U.S. households that have access to DSL.
- **Qualifying potential DSL subscribers remains a problem for DSL providers.** Though improving, DSL providers still have difficulty qualifying prospective subscribers without a truck roll.
- **Shorter wait periods for cable modem service.** In general, cable operators are installing cable modem service two to five days after the consumer requests service. DSL providers, on the other hand, take three to five weeks to install DSL service.⁷³

These advantages position cable modem service as the front runner provider of mass market broadband services.

b. DSL

DSL continues to gain subscribers; however, as discussed previously, market share remains far behind market shares enjoyed by cable modem services. As stated above, DSL had less than half as many customers as did cable modem at the end of June 2001 – 5.5 million cable

⁷³ The Yankee Group (Oct. 18, 2001).

modem customers compared to 2.5 million DSL customers. The above discussion fully demonstrates that cable modem's dominant position over DSL is not expected to diminish over the next five years.

c. Wireless

Although most broadband services are currently provided over wirelines networks, *i.e.* phone lines and cable modem operators' coaxial cables, wireless providers of broadband have made significant strides and will continue to grow significantly. "There are three major classes of wireless broadband access networks emerging: mobile, fixed and satellite."⁷⁴

i. Mobile

Just as with wireline networks, wireless mobile networks were originally designed for analog voice signals but have since been converted to handle digital traffic. The next generation of wireless mobile networks, personal communications service ("PCS") systems, were built for digital signals.⁷⁵ Neither, however, is very effective in transmitting large amounts of data at high speed.⁷⁶ Two factors, however, have occurred that will change this problem – the development of "2.5 G (general packet radio services or GPRS) and 3G broadband digital data networks."⁷⁷ These advanced services currently are being offered in many European countries, and analysts

⁷⁴ Harris Paper at 6.

⁷⁵ PCS is also used for the provision of fixed wireless broadband services. See discussion in Fixed Wireless section below.

⁷⁶ Harris Paper at 6-7.

⁷⁷ *Id.* at 7.

predict that major wireless companies in the United States will begin offering such services in the near future.⁷⁸

ii. Fixed Wireless

Fixed wireless services offer providers the opportunity to provide the last mile high-speed Internet services to customers without the need for a wire technology. There are several fixed wireless spectrums used to provide broadband services today. The most prominent licensed spectrum technologies are multichannel multipoint distribution service (“MMDS”) and PCS. Others include local multipoint distribution service (“LMDS”) and wireless communications service (“WCS”). Although faced with challenges in provisioning, new technology is being advanced that will help service providers of fixed wireless. First generation MMDS required line of sight between the transmitting tower and the end-user customer premises equipment (“CPE”). Vendors, however, are working on developing a non-line of sight technology.⁷⁹ Additionally, MMDS is in the process of switching “from super-cell to multi-cell architecture that enables service providers to improve availability and reliability of fixed wireless services.”⁸⁰

MMDS, and other technologies, are expected to see a significant increase in customers over the next four to five years. Fixed wireless systems CPE and installation costs range from \$200 to \$600 with an average monthly service charge of \$50.⁸¹ These prices are very competitive with both cable modem and DSL. As the Commission noted in its *Third Report*,

⁷⁸ *Id.*

⁷⁹ The Yankee Group Report, *Fiber-to-the-Curb, Fiber-to-the-Home, 'Fixed Wireless, and Powerline Communications: Threatening Cable Modem's and DSL's Hegemony?* Vol. 18, Issue 13 (Aug. 22, 2001).

⁸⁰ *Id.*

⁸¹ *Id.*

“terrestrial fixed wireless technology accounts for between 50,000 and 150,000 high-speed lines.”⁸² Moreover, one analyst “forecasts the residential MMDS subscriber base will grow from roughly 61,000 users in 2001 to nearly 450,000 at the end of 2006.”⁸³

iii. Satellite

Satellite services can offer inherent technological advantages such as low-cost transmission rates, broad geographic coverage areas, and low operational costs. Despite costly satellite construction and launch, providing the satellite service requires significantly less infrastructure than terrestrial-based systems, which keeps marginal costs low. High-speed broadband service via satellite takes several forms, including direct transmission to small home satellite dishes. For example, Hughes Communications offers high-speed Internet access service (up to 128 kbps upstream and 400 kbps downstream) via satellite to subscribers “anywhere in North America for \$59.99 per month plus hardware through its “DIRECTWAY” offerings.⁸⁴ Additionally, StarBand Communications became operational in late 2000.⁸⁵ Several satellite providers project deployment of additional systems using the Ka-band that will be capable of providing residential and business advanced services over the next several years.”⁸⁶ Industry analysts believe that “Satellite offerings should become increasingly visible over the next 12-18

⁸² *Third Report*, ¶ 55.

⁸³ The Yankee Group (Aug. 22, 2001).

⁸⁴ See http://www.hns.com/global/north_america/north_america.htm and http://dtv.direcway.com/home/order/order_now.html

⁸⁵ *Third Report* at ¶ 77.

⁸⁶ *Id.*

months, at first competing effectively in markets underserved by cable and xDSL and, over time, as part of a bundled video offer with strong appeal for certain customer segments”⁸⁷

2. ILECs Are Not Dominant in the Provision of Broadband Services to the Mass Market

Numerous entities, including cable operators, terrestrial wireless providers, satellite operators, CLECs and ILECs, are forging ahead with assorted strategies for mass-market broadband capabilities. These many participants will ensure efficient deployment of broadband under a variety of marketing plans and technologies, and will restrict each other’s ability to raise prices or engage in anticompetitive behavior.

a. No Single Entity Has Critical Market Share

As discussed previously, in the mass market for broadband services, cable modems have secured an early lead as the transmission medium of choice for many consumers. That lead is expected to remain at least through 2005. “At the end of the second quarter of 2001, approximately 5.5 million households in the United States subscribed to cable modem service”⁸⁸ This is compared to only 2.5 million DSL subscribers and 100,000 broadband satellite subscribers for the same period.⁸⁹ Analysts project that by the year 2005 approximately 30.96 million households will have broadband services. Of these households, 15.7 million will have cable modem service, 10.5 million will have DSL service, 4.5 million will have satellite service, and .26 million will have fixed wireless service.⁹⁰

⁸⁷ Harris Paper at 8-9 citing “Broadband 2001,” JPMorgan H&Q, McKinsey, April 2, 2001, p. 7.

⁸⁸ The Yankee Group (Oct. 18, 2001).

⁸⁹ *Id.*

⁹⁰ *Id.*

As stated above, cable modem providers almost doubled the number of customers held by DSL providers. Thus, no one provider has a dominant market share for broadband mass-market services. Indeed, market share figures clearly demonstrate that BellSouth is far from being a dominant provider of broadband services. Within its region, BellSouth had only a 23% market share as of June 30, 2001, compared to cable modem providers 52% market share.⁹¹

Significantly, BellSouth's 23% market share is well below AT&T's market share when the Commission declared it non-dominant in the provision of domestic interstate interexchange services.⁹² Moreover, when the Commission declared AT&T non-dominant, there was no other dominant provider in its market as compared to the broadband mass market which has a dominant provider in cable modems. Following its past precedent, the Commission must find that ILECs do not have a critical market share.

b. Demand Will Not Be Inelastic.

There is no basis to conclude that demand for broadband services is inelastic. High-end users exhibit the same type of sophistication and understanding here that they do for long distance and enhanced services, using information technology consultants and in-house communications experts. Not surprisingly, as consumers experience these capabilities at work or

⁹¹ See High-Speed Services for Internet Access. Subscribership as of June 30, 2001, Industry Analysis Domain, Common Carrier Bureau, February 2002. Table 7 of this report provides the number of high speed lines, defined as providing over 200 kbps in at least one directs, by state. The total number of lines for the 9 BellSouth states total approximately 1,677,000. BellSouth had a total ADSL customer base of approximately 381,000 as of June 30, 2001. Because of confidentiality reasons, the Commission did not list every cable modem line for every state. Accordingly to determine market share for cable modems, cable modem lines for Kentucky and Mississippi are not included in the calculation.

⁹² AT&T's market share was estimated at 60%. *AT&T Non-Dominance Order*, 11 FCC Rcd at 3307-08, ¶ 67-72.

learn about them through the media, residential and small business users are demanding and purchasing broadband communications capability at ever increasing levels of sophistication and specialization. Thus, the broadband mass market will likely unfold as its interexchange precursor, where, according to the Commission, “residential and small business customers are highly demand-elastic, and will switch carriers in order to obtain price reductions and desired features.”⁹³ Consumers are willing to switch to another service provider to obtain a higher level of performance, functionality, or portability, or a lower price.⁹⁴

Although the broadband market is still developing, the most vital determinant of demand elasticity — the availability of substitute goods — is certainly present. If an ILEC attempts to raise its prices for DSL service, above competitive levels, customers can migrate to an increasingly wide variety of substitutable services.⁹⁵ In addition, broadband services in the mass market are evolving very quickly⁹⁶ which means short cycles between increases in performance or functionality are likely. This will spark consumer movement to more enhanced offerings. In short, small businesses and consumers know they have choices and appear able and willing to exercise them.

⁹³ *In the Matter of Policy and Rules Concerning the Interstate, Interexchange Marketplace and Implementation of Section 254(g) of the Communications Act of 1934, as Amended* CC Docket No. 96-61, *Second Report and Order*, 11 FCC Rcd 20730, 20742-43, ¶ 21 (1996); see also *AT&T Non-Dominance Order*, 11 FCC Rcd at 3307, ¶ 66.

⁹⁴ See Declaration of Robert W. Crandall and J. Gregory Sidak, Attachment 1 to *SBC Petition* at ¶¶ 63-66.

⁹⁵ *Id.*

⁹⁶ See Harris Paper, §2.1.

c. Supply Elasticity is High

The broadband market is subject to elastic competitive supply because barriers to entry for new providers are low and existing suppliers can absorb each other's customers and expand their businesses. First, with respect to entry barriers, supply elasticity tends to be high if new suppliers can enter the market relatively easily because of low entry barriers.⁹⁷ The number and diversity of broadband services participants confirms that entry barriers are not prohibitive. Despite the initial costs involved in entering the market, these costs have not risen to the level of creating a financial barrier to such entry. Numerous diverse suppliers are established, and more are developing and deploying broadband services, which means that these entities have been able to access adequate capital. In terms of legal and regulatory barriers, only the ILECs face severe constraints, such as interLATA restrictions, unbundling requirements (line sharing and line splitting), and burdensome pricing and tariffing requirements, on their ability to offer broadband services in an efficient, integrated manner. Thus, competitors face few barriers to expanding service in response to price and service changes.

Supply will also be deemed elastic if existing competitors can easily and quickly acquire additional capacity.⁹⁸ Broadband services competitors are likely to have sufficient capacity to add a significant number of broadband access customers with relative ease and thus absorb the customers of another competitor that has raised the price of its service.⁹⁹ The heavy expenditures

⁹⁷ *AT&T Non-Dominance Order*, 11 FCC Rcd at 3303, ¶57.

⁹⁸ *Id.*

⁹⁹ *See id.* at 3304, ¶60 (rejecting notion that AT&T's competitors be capable of serving all of AT&T's customers within a short time frame in favor of determination of whether such competitors "can add significant numbers of new customers with their existing capacity and add incrementally to this capacity as new customers are added to their networks."); *In the Matter of*

tend to lie in initial development and construction, and not in actual operation — once a network is built, the marginal cost of serving subscribers is relatively low. Satellite operators, for example, have low operational costs. Similarly, upon installation of a MMDS system in a given location, it costs little for the MMDS provider to supply an additional home in that area. Moreover, because analysts universally anticipate a sustained period of growth for broadband services,¹⁰⁰ service providers will continue to realize economies of scope serving incremental demand without the need to capture customers from other suppliers. Thus, new suppliers can readily enter the market and existing competitors can increase the quantity of services supplied in response to an increase in price.

d. No Entity has an Inherent Advantage

In the broadband market, no competitor has an inherent advantage based upon its cost, structure, size, or access to resources. The players include AT&T Broadband, WorldCom, AOL/Time Warner, Comcast, and several other substantial entities. While ILECs have POTS infrastructure in place, for the broadband mass market ILECs have started from ground zero just like every other competitor. Despite having a base of customers and physical plant, costly transformations of networks needed to support broadband nullifies any potential advantage

Western Union International, Inc. Petition for Reclassification as a Non-Dominant IMTS Carrier from Guam to Overseas Points, File No. ISP-96-004-ND Order, 13 FCC Red 4161, 4166-66, ¶ 11 (1997) (for purpose of evaluating supply elasticity, recently-authorized licensees and other carriers that “are offering or will soon offer” competing services were included within the measurement of increased capacity). Moreover, the ability to absorb additional customers is evident by the recent bankruptcy of Excite@home in September of 2001. All of Excite’s customers were able to be picked up by cable modem and other broadband providers. *2001 MVPD Competition Report*, ¶ 47.

¹⁰⁰ The Yankee Group (Oct. 18, 2001).

caused by the relative size or incumbency of local companies, cable operators, or wireless companies.¹⁰¹

e. Conclusion: No Entity Can Exercise Market Power.

Mass market broadband services are highly-competitive today: consumer demand is increasing and cannot be deemed inelastic; numerous suppliers offering functionally-substitutable services are entering with low barriers and will be capable of absorbing the market's expected growth; and no entity has an inherent size advantage. In such a market, where consumers can freely choose among various technologies, speeds, functionalities, and prices, no supplier has the ability to raise or maintain prices above costs or exclude competition; thus, no entity is dominant.¹⁰²

D. ILECs Are Not Dominant in the Provision of Services to the Large Business Market

Just as with the mass market, significant competition exists in the large business broadband market. Numerous entities provide these services to large business customers, including AT&T, Sprint, and WorldCom. Moreover, these carriers have the ability to provide such services on an interstate basis through integrated operations. No entity that provides broadband services to the large business market has a critical market share. Hampered by interLATA restrictions and structural separations requirements, BellSouth clearly is not a dominant provider. Moreover, large business customers have been purchasing these services for several years and are very sophisticated consumers having full time staffs dedicated to addressing data and telecommunications needs. The number of suppliers is significant, which

¹⁰¹ See *id.*

yields large business consumers with ample substitutable services. Thus, the demand for such services is elastic.

Supply elasticity is also evident in the large business market. There are very few barriers to market entry and providers can easily increase capacity to absorb additional customers. Indeed, efficiencies of scale are manifest in their operations. Finally, none of the providers have an inherent advantage in the market place. Customers are widely spread among numerous competitors. Large businesses are constantly seeking new ways to lower costs and often take advantage of the choice of providers for these services whenever they can obtain more economical rates. Accordingly, the Commission should deem ILECs non-dominant in the provision of ATM, Frame Relay, and Gigabit Ethernet and apply forbearance to all Title II regulations.

E. The Commission Must Implement its Forbearance Mandate

Section 706 of the Act requires the Commission to use regulatory forbearance and other measures to encourage the rapid deployment of advanced services to American consumers.¹⁰³ The Commission cannot satisfy this statutory command without eliminating unnecessary and uneven regulation of ILEC broadband services.

Market distortions caused by asymmetrical regulation cannot be justified in a competitive market, let alone a converging market.¹⁰⁴ The Commission actively has sought to harmonize

¹⁰² See *AT&T Non-Dominance Order*, 11 FCC Rcd at 3346-3347, ¶¶138-42.

¹⁰³ Section 706(a) and (b) of the *Telecommunications Act of 1996*, Pub. L. 104-104, 110 STAT. 56 (1996), reproduced in the notes under 47 U.S.C. § 157.

¹⁰⁴ See *In the Matter of Implementation of Sections 3(n) and 332 of the communications Act, Regulatory Treatment of Mobile Services, et al.*, GN Docket No. 93-252, 9 FCC Rcd 7988, 7996, ¶ 13 (“*CMRS Regulatory Parity Order*”) (broadly interpreting statutory terminology to

regulatory requirements and thereby stimulate economic growth in contexts as diverse as LEC payphone services or CMRS, and should do so for broadband services as well.¹⁰⁵ Because of the ubiquity of the ILEC networks, the Commission has found ILECs to be “especially effective” at offering services to residential and small business users. Regulation that fetters the ILECs, therefore, harms the public by denying consumers the benefit of services that could be “widely and efficiently available” through their local exchange provider.¹⁰⁶ In the absence of regulatory relief, the Commission’s current regulatory policies will make the ILECs less effective competitors in the market. Instead, reducing regulatory constraints will stimulate ILEC investment and increase competition in services for residential consumers and small businesses.

The public interest is best served by ensuring that *all* competitors have incentives to invest in and to deploy advanced services rapidly. Accordingly, the Commission should forbear under Section 10 from dominant carrier pricing, tariffing and Section 214 requirements of ILEC broadband services; and eliminate existing, and not create any new, unbundled network elements (“UNE”) for broadband services pursuant to section 251(d).

“promot[e] uniformity in CMRS regulation and, thereby, minimize [] the potentially distorting effects of asymmetrical regulation.”).

¹⁰⁵ See *In the Matter of Implementation of the Pay Telephone Reclassification and Compensation Provisions of the Telecommunications Act of 1996, et. al*, CC Docket Nos. 96-128, 91-35, *Report and Order*, 11 FCC Rcd 20541, 20611, ¶142 (1996) (deregulating ILEC payphones after finding a competitive market for payphone CPE); *CMRS Regulatory Parity Order*, 9 FCC Rcd at 8002 ¶23 (establishing a symmetrical regulatory framework for similar mobile services). When the Commission perceived the infant domestic satellite market as having great potential for offering innovative services through a new and largely untested technology, the Commission fostered its development by establishing a policy of encouraging open entry and of minimizing regulatory restraints. See *In the Matter of Domestic Fixed-Satellite Transponder Sales, et al.*, CC Docket No. 82-45, *Memorandum Opinion Order and Authorization*, 90 FCC 2d 1238 (1982), *affd sub nom. Wold Communications v. FCC*, 735 F.2d 1465 (D.C. Cir. 1984).

¹⁰⁶ *In the Matters of: Amendment of Sections 64.702 of the Commission’s Rules and Regulations (Third Computer Inquiry), et al.*, CC Docket No. 85-229, *Report and Order*, 104 FCC 2d 958 1007-08, ¶¶ 89-91 (“*Computer II Phase I Order*”).

Section 706 commands that broadband services be promoted through robust competition and prescribes regulatory forbearance as a means of fostering such competition. Section 10 in turn directs the Commission to forbear from enforcing any regulatory or statutory requirements that “inhibit or distort competition in the marketplace, represent unnecessary regulatory costs, or stand as obstacles to lower prices, greater service options, and higher quality services for American telecommunications consumers.”¹⁰⁷ Dominant carrier regulation of broadband services represents exactly the type of unnecessary obstacle that must be removed.

Specifically, Section 10 *requires* the Commission to forbear from applying any regulation or provision of the Act if the Commission determines that: (1) enforcement is not necessary to ensure that the rates and practices of a telecommunications carrier or service are just, reasonable and not unjustly or unreasonably discriminatory; (2) enforcement is not necessary to protect consumers; and (3) forbearance is consistent with the public interest.¹⁰⁸ In assessing the public interest, the Commission must consider whether forbearance will promote competitive market conditions and enhance competition among service providers.¹⁰⁹

In order to accomplish the broadband objectives outlined in these comments, the Commission must forbear from enforcing pricing, tariff filing and other restrictions that are appropriate only for dominant carrier services, including (i) any applicable price cap regulation for ILEC provision of broadband services, (ii) the requirement that ILECs file tariffs on more

¹⁰⁷ *In the Matter of Personal Communications Industry Association’s Broadband Personal Communications Services Alliance’s Petition for Forbearance For Broadband Personal Communications Services, et. al*, WT Docket No. 98-100, *Memorandum Opinion and Order and Notice of Proposed Rulemaking*, 13 FCC Rcd 16857, 16858, ¶ 2 (1998), (“PCIA Order”), at ¶ 2.

¹⁰⁸ 47 U.S.C. § 160(a).

¹⁰⁹ 47 U.S.C. § 160(b).

than one day's notice with cost support, (iii) restrictions on contract carriage, and (iv) any dominant carrier Section 214 requirements that may apply. As explained below, in the broadband services context where no entity has market power, forbearance will allow ILECs to satisfy consumer demands more efficiently and at lower rates without harming consumers or competition.¹¹⁰

Basic economic principles instruct that “aspects of dominant carrier regulation may hinder competition . . . if applied to a carrier that no longer possesses market power.”¹¹¹ In a competitive environment market forces amply protect the public from unreasonably high rates and undue discrimination.¹¹² Non-dominant firms lack the incentive to charge rates or engage in anticompetitive practices because, simply, “customers could always turn to competitors.”¹¹³ In the broadband services market, ILECs have no incumbency advantage or market power, and thus, the Commission must not retain dominant carrier regulation for ILECs' broadband services.

The presence of actual and imminent competitors in the broadband services market will ensure just, reasonable, and not unreasonably discriminatory prices and practices by all competitors. Each competitor, ILECs included, started with *zero* market share and *no* incumbent

¹¹⁰ *In the Matter of Implementation of Section 402(b)(2)(A) of the Telecommunications Act of 1996*, CC Docket No. 97-11, *Notice of Proposed Rulemaking*, 12 FCC Rcd 1111, 1132, ¶ 46 (1997) (“*Section 214 NPRM*”).

¹¹¹ *Comsat Order*, 13 FCC Rcd at 14118, ¶ 66.

¹¹² See *Section 214 NPRM*, 12 FCC Rcd at 1130, ¶ 43 (citing *Policy and Rules Concerning Rates for Competitive Common Carrier Services and Facilities Authorizations Therefore*, CC Docket No. 79-252, First Report and Order, 85 FCC 2d 1 (1980); Second Report and Order, 91 FCC 2d 59 (1982); Fourth Report and Order, 95 FCC 2d 554 (1983), *vacated sub nom. American Tel. and Tel. Co. v. FCC*, 978 F.2d 727 (D.C. Cir. 1992); Fifth Report and Order, 98 FCC 2d 1191; Sixth Report and Order, 99 FCC 2d 1020 (1985), *vacated sub nom. MCI Tel. Corp. v. FCC*, 765 F.2d 1186 (D.C. Cir. 1985)).

¹¹³ *Section 214 NPRM*, 12 FCC Rcd at 1131 n. 75; see *Comsat Order* at ¶ 9.

advantage. If an ILEC were to charge an above-market price for, or to impose stringent terms and conditions on, DSL service, for example, consumers could simply switch to another broadband services supplier (*i.e.*, cable modem or a satellite operator).

Nor could a firm such as BellSouth charge predatorily low prices for broadband services. Predatory pricing only occurs when there are barriers to entry and when the predator firm has the ability to raise other prices to recoup its costs.¹¹⁴ Barriers to entry in the broadband services market are low. An ILEC could not keep other firms from entering the market for any period long enough to make predation worthwhile. Price cap LECs, moreover, could not recoup the foregone revenues by raising prices on other services, thus predation would not be economically justifiable.

F. Consumers Are Adequately Protected Without Dominant Carrier Pricing and Tariffing

Competitive market conditions for broadband services also amply protect consumers. In fact, the Commission has stated that “[c]ompetitive markets are superior mechanisms for protecting consumers by ensuring that goods and services are provided to consumers in the most efficient manner possible and at prices that reflect the cost of production.”¹¹⁵ Thus, a market-based approach for competitive broadband services offers the best form of protection for consumers.

¹¹⁴ See *Price Cap Performance Review for LECs, et. al*, CC Docket Nos. 94-1, 93-124, 93-197, Second Further Notice of Proposed Rulemaking, 11 FCC Red 858, 870-71 (1995); *Policy and Rules Concerning Rates for Dominant Carriers*, CC Docket No. 87-313, Notice of Proposed Rulemaking, 2 FCC Red 5208, 5216 (1987).

¹¹⁵ *In the Matter of Access Charge Reform; Price Cap Performance Review for Local Exchange Carriers et al.*, CC Docket Nos. 96-262, 94-1, 91-213, 95-72, *First Report and Order*, 12 FCC Red 15982, 16094, ¶ 263 (1997).

Under a market-based approach, the Commission should forbear from Title II regulation to the maximum extent possible. ILECs would remain subject to Sections 201 and 202 of the Act which, in conjunction with Section 208 complaint procedures, ensure that rates and practices are just, reasonable and not unreasonably discriminatory. ILEC tariff filings, even if streamlined, could still be rejected or suspended and investigated under Section 204.¹¹⁶ Thus, “[m]arket forces, together with the Section 208 complaint process and the Commission’s ability to reimpose tariff-filing and facilities-authorization requirements, [are] sufficient to protect the public interest,”¹¹⁷ and especially so for competitive broadband services.

G. Forbearance From Dominant Carrier Pricing and Tariffing For Broadband Services Will Promote Competitive Market Conditions And Enhance Competition

When an entity no longer possesses market power in a relevant market, the Commission must reclassify it as non-dominant in that market.¹¹⁸ Maintaining dominant carrier regulation in the highly competitive broadband services environment is unfair, creates inefficiencies, and only hurts consumers by delaying the deployment of broadband services. Conversely, forbearance will stimulate competition by leveling the playing field for all providers and facilitate innovative integrated service offerings designed to meet changing market conditions. Forbearance enables carriers to satisfy consumer demand faster and at lower rates by reducing the costs and delay of a carrier introducing new services or changing rates, as well as the disclosure of competitively

¹¹⁶ See *In the Matter of Revision to Price Cap Rules for AT&T Corp.*, CC Docket No. 93-197, *Report and Order*, 10 FCC Rcd 3009, 3017 ¶ 128 (1995) (“*AT&T Price Cap Order*”).

¹¹⁷ *Section 214 NPRM*, 12 FCC Rcd at 1131 n. 75.

¹¹⁸ *Comsat Order*, 13 FCC Rcd at 14097, ¶ 21.

sensitive information to rival carriers.¹¹⁹ As outlined below, the public interest and Section 706's explicit command to ensure rapid deployment of broadband services to all Americans compel the Commission to promote broadband services competition through aggressive Section 10 forbearance.

1. Relieving Pricing Restrictions

Dominant regulatory treatment in the form of pricing restrictions imposes substantial barriers to ILEC full participation in broadband services, and is unnecessary given the market's competitive conditions. With a functioning market, there is a compelling public interest in letting the market – rather than some artificial constraint – dictate pricing, for pricing restrictions are intended only to replicate “the discipline of a competitive marketplace.”¹²⁰ The Commission has long maintained a policy of relaxing pricing regulation as competition develops, and deregulating services subject to effective competition: “permitting incumbent LECs certain kinds of pricing flexibility in response to the development of competition will allow prices for . . . services to adjust in ways that reflect the underlying economic costs of providing those services without moving outside the range of rates that are just and reasonable.”¹²¹

¹¹⁹ *In the Matter of Policy and Rules Concerning Rates for Competitive Common Carrier Services and Facilities Authorizations Therefor*, CC Docket No. 79-252, *Fifth Report and Order*, 98 FCC.2d 1191, 1199 ¶ 10 (1984).

¹²⁰ *In the Matter of Price Cap Performance Review for Local Exchange Carriers; Access Charge Reform*, CC Docket Nos. 94-1, 96-262, *Fourth Report and Order* in CC Docket No. 94-1 and *Second Report and Order* in CC Docket No. 96-262, 12 FCC Red 16642, 16701 ¶ 150 (1997). See also *Access Charge Reform, et al.*, CC Docket No. 96-262, 94-1, 91-213, 95-72, *First Report and Order*, 12 FCC Rcd 15982, 16093 ¶ 258 (1997) (endorsing a market-based approach to price cap regulation that permits “certain pricing flexibility upon a showing that meaningful competitive entry is possible within a particular” market) (emphasis added).

¹²¹ *In the Matter of Access Charge Reform et al.*, 12 FCC Rcd at 16095, ¶ 264.15982, 16095 (1997).

Price cap regulation was intended to increase productivity and efficiency while stimulating innovation.¹²² The Commission even sought to promote high-speed services such as ISDN when it created the price cap regime, believing that price cap regulation would “increase the LECs’ incentive and opportunity to develop and introduce new services, to invest in new technology like ISDN and SS7, to innovate, and to upgrade their networks.”¹²³ Where the ILECs have done just that, and where their incumbency offers no unfair competitive advantage, the Commission must allow pricing flexibility. Broadband services, such as ADSL, are more properly viewed as an intended byproduct of price cap regulation, not a cause for competitive concern.

2. Streamlining Tariffing Regulation

The Commission repeatedly has affirmed that tariffing is not necessary to ensure reasonable rates for carriers that lack market power.¹²⁴ In fact, the Commission has stated that “traditional tariff regulation of non-dominant carriers is not only unnecessary to ensure just and reasonable rates, but is actually counterproductive since it can inhibit price competition, service innovation, entry into the market, and the ability of carriers to respond quickly to market trends.”¹²⁵

¹²² See *In the Matter of Price Cap Performance Review for Local Exchange Carriers*, CC Docket No. 94-1, *Notice of Proposed Rulemaking*, 9 FCC Rcd 1687, 1692 ¶ 31 (1995) (reasoning that price cap regulation would encourage the LECs to modernize their network and develop advanced applications and new services).

¹²³ *Id.* at 1699, ¶ 67.

¹²⁴ See, e.g., *PCIA Order*, 13 FCC Rcd at 16885, ¶ 57; *In the Matter of Tariff Filing Requirements for Nondominant Common Carriers*, CC Docket No. 93-36, *Order*, 10 FCC Rcd 13653, 13655, ¶ 11 (1995) (“*Nondominant Carrier Filing II*”).

¹²⁵ *In the Matter of Tariff Filing Requirements for Nondominant Common Carriers*, CC Docket No. 93-36, *Memorandum Opinion and Order*, 8 FCC Rcd 6752, 6752, ¶ 2 (1993) (“*Range Tariff Order*”).

Long tariff notice periods severely distort the market if the carrier is no longer dominant.¹²⁶ If ILECs are required to adhere to dominant tariffing requirements for broadband services, they will be subject to potentially protracted Commission review of new service offerings and will be forced to disclose potentially sensitive pricing and other information to rivals.

3. Removing Restrictions on Contract Tariffs

ILECs should be permitted to offer broadband services under streamlined regulation that enables ILECs to enter into individually-tailored customer contracts, in the same fashion as interexchange carriers and other non-dominant carriers.¹²⁷ Just as with the enhanced services in yesterday's constructs, inherent in the offering of today's broadband services "is the ability of service providers to custom tailor their offerings to the particularized needs of their individual customers."¹²⁸ Contract carriage increases "the ability of customers to negotiate service arrangements that best address their particular needs,"¹²⁹ and also expands overall available options, which reduces the likelihood of discriminatory or concerted action.

H. The Commission Must Remove UNEs Related to Broadband from the UNE List

No other broadband services entrants are forced to choose between dismantling their broadband service offerings or offering such services subject to intrusive regulation that prevents

¹²⁶ *Comsat Order*, 13 FCC Rcd at 14118, ¶ 66.

¹²⁷ *See* 47 C.F.R. § 61.3(m).

¹²⁸ *In the Matter of Amendment of Section 64.702 of the Commission's Rules and Regulations ("Second Computer Inquiry")*, Docket no. 20828, *Final Decision*, 77 FCC 2d 384, 431, ¶ 123 (1980) ("*Computer II Final Decision*").

them from realizing economies of scope. However, rather than taking Congress's directive and lessening the regulatory burdens associated with the provision of broadband services, the Commission has placed significant, and suggested imposing new and more onerous, unbundling and collocation requirements upon ILECs' broadband services.

Through its Section 251(d)(2) authority to specify network elements,¹³⁰ the Commission has the power to interpret unbundling obligations in a manner appropriate for broadband services. Section 251's resale, unbundling and collocation requirements were intended to provide access to the ILECs' local exchange networks, *not* to newly emerging, competitive services.¹³¹ As demonstrated throughout these comments, subjecting ILECs' broadband services to unbundling requirements discourages ILEC investment and innovation, creates a disincentive for competitors to build out facilities, and prevents ILECs from differentiating service offerings in the evolving broadband services market.¹³² Instead, the regulatory model that the Commission should adopt for broadband services must allow ILECs the flexibility to provide such services

¹²⁹ *In the Matter of Revisions to Price Cap Rules for AT&T Corp.*, 10 FCC Rcd 3009, 3018-19, ¶ 27 (quoting *Competition in the Interstate Interexchange Marketplace*, CC Docket No. 90-132, *Report and Order*, 6 FCC Rcd 5880, 5899 (1991)), (*AT&T Price Cap Order*).

¹³⁰ 47 U.S.C. § 251(d)(2).

¹³¹ See Barbara Esbin, *Internet Over Cable: Defining the Future in Terms of the Past*, OPP Working Paper Services, August 1998 at 1 ("[T]he 1996 Act's primary approach to communications services, service providers and facilities neither fully reflects nor anticipates the impact of Internet-based communications capabilities on existing networks and the regulatory regimes that govern them.").

¹³² See *In the Matter of Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, et al.*, CC Docket No. 96-98, *First Report and Order*, 11 FCC Rcd 15499, 15744, ¶ 489 (1996) (*Local Competition Order*), (recognizing that "providing unbundled access to AIN call-related databases at cost, and in particular providing access to the incumbent LEC's software applications that reside in the AIN databases, may reduce the incumbent's incentive to develop new and advanced services using AIN.").

using a business structure based on market conditions, not on regulatory fiat. As Commissioner Abernathy said:

I believe it's important to focus on the costs of forced unbundling, in addition to the purported benefits. As Congress recognized in section 251(c)(3), some degree of unbundling was clearly necessary to introduce competition to local markets, because incumbents' control of bottleneck facilities otherwise would preclude entry. *But Congress also enacted the impairment standard in section 251(d)(2) so that the FCC would consider whether the costs associated with forced sharing of incumbent LECs' facilities were warranted.*¹³³

Accordingly, the Commission should use Section 251(d) in the on-going *UNE Triennial Review*¹³⁴ proceeding to ensure that no new unbundling requirements are added to the UNE list and eliminate those previously implemented – line sharing, line splitting, and packet switch unbundling when a CLEC cannot collocate at a remote terminal.

I. The Commission Should Provide Leadership to State Commissions

Section 706's instruction to remove barriers to investment in and to promote deployment of advanced services applies equally to the Commission and *each state commission*.¹³⁵ The Commission should provide strong leadership to state commissions by encouraging them to forbear from any applicable pricing, tariffing and other restrictions imposed on only one class of advanced services competitors, and to interpret flexibly Section 251's collocation, resale, and unbundling requirements, including pricing standards. The Commission should send a clear

¹³³ Commissioner Abernathy Remarks (Oct. 7, 2001) (last italics added).

¹³⁴ *In the Matter of Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers, et al.*, CC Docket No. 01-338, *Notice of Proposed Rulemaking*, FCC 01-361 (rel. Dec. 20, 2001) ("*UNE Triennial Review*").

¹³⁵ § 706(a), 47 U.S.C. § 157 notes.

message to the states that open markets are the top national telecommunications priority. Such leadership is consistent with Section 706's explicit policy mandate.

V. Conclusion

Albert Einstein once said "make everything as simple as possible, but not simpler." Although BellSouth does not pretend that broadband is not a complex issue; however, the direction it will take in the future is relatively simple. The facts: there are multiple competitors providing broadband services over different modes; demand for broadband services is by no means certain; supply of broadband services will cost billions of dollars of investment in deployment costs; the Commission has taken a hands-off regulatory approach to all competitors except one – ILECs; unless the Commission applies deregulatory parity to all providers, ILECs will be forced to alter their deployment plans thus limiting consumers' choices, delaying broadband availability, and increasing prices. Based on these facts, the answer is simple – the Commission should treat all competitors equally and adopt deregulation as its goal for broadband. The Commission should not allow entities that have a self interest in riding the investment of ILECs risk free intentionally obfuscate the issue. The future of broadband is too important. The Commission should heed the words of Hewlett-Packard's CEO, Carly Fiorina:

Today we look through our screens into a broadband future that could disperse health, wealth, and knowledge on a significant scale...to literally every corner of this world. We have the technological means to do it. We have a population that, once they are educated about its promise and its likelihood, will demand it. And we have an opportunity to do our best to include everybody in this global economy...not just those who are lucky enough to live

in mature markets. Will we let old habits and old laws keep that screen half-dark?¹³⁶

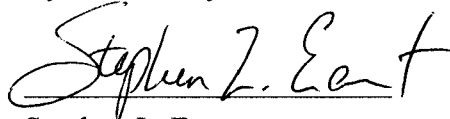
The gravity of the situation cannot be overstated when considering all that is at stake.

BellSouth is confident that the Commission will do what is best for all Americans and move to a deregulatory policy that will ensure rapid broadband deployment.

Respectfully submitted,

BELLSOUTH CORPORATION

By its Attorneys

A handwritten signature in black ink, appearing to read "Stephen L. Earnest", written over a horizontal line.

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435397

¹³⁶ Thesis, Antithesis, Synthesis: Policymaking in an Internet Age, Opening Address, Aspen Summit 2001, Progress and Freedom Foundation, Aug. 19, 2001.
<<http://www.pff.org/aspen2001/Fiorinaspeech.htm>>

**“Deployment of Broadband Networks
and Advanced Telecommunications”**

Responses to the Notice & Request for Comments

Docket No. 011109273-1273-01

National Telecommunications and Information Administration

U. S. Department of Commerce

by

Professor Robert G. Harris*

on behalf of

BellSouth Corporation

December 19, 2001

*Qualifications of Professor Harris are presented in Appendix A.

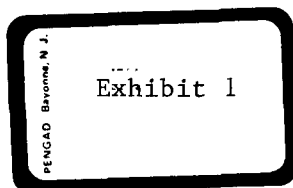


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1 Toward a National Broadband Policy

I commend the NTIA for its initiative in addressing the need for a national policy to promote innovation and investment in broadband access and applications. Since the passage of the Telecommunications Act of 1996, the Internet has become a dominant feature of the communications landscape. At the time, the Internet was in its infancy; some wondered if it was any more than a passing fancy, so it is not surprising that the Act was concerned almost solely with voice-grade communications. In less than six years since the passage of the Act, the Internet has become one of the most significant and revolutionary technological changes of human history. Thus, there can be no doubt about the power of digital convergence to accelerate technological innovation, and the potential benefits of broadband access to further stimulate productivity and economic growth; improve education and access to information; and increase a community through connectivity.

While few could foresee the Internet explosion at the time, Congress did recognize, in generic terms, the importance of public policies to promote the development of advanced telecommunications services, which surely would include broadband access. In Section 706 of the Act, Congress instructed that:

The Commission and each State commission with regulatory jurisdiction over telecommunications services shall encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans (including, in particular, elementary and secondary schools and classrooms) by utilizing, in a manner consistent with the public interest, convenience, and necessity, price cap regulation, regulatory forbearance, measures that promote competition in the local telecommunications market, or other regulating methods that remove barriers to infrastructure investment.¹

A reasonable reading of this provision of the Act suggests that very different regulatory policies toward advanced services—especially broadband access—should have been implemented by the FCC and state commissions. Unfortunately, that has not been the case: in their implementation of the Act, the Federal Communications Commission (FCC) and state commissions have developed regulatory policies that are one-sided: incumbent local exchange carriers (ILEC's) are heavily regulated, while their competitors are not, whether "competitive" local exchange carriers (CLEC's), cable operators, inter-exchange carriers (IXC's), mobile carriers, satellite carriers, stationary wireless carriers, or any other mode of communications or type of service provider. Rather than "removing barriers to infrastructure investment" in

¹ Telecommunications Act of 1996, Section 706. (Hereinafter "TA96.")

broadband networks, regulators appear to have been erecting them. For that reason, broadband access is not developing at the rate it could be.

Fortunately, there is growing recognition of the need for major changes in our nation's public policies, and the NTIA can and should play an important role in that process. As it undertakes that effort, I strongly support the "Guideposts for Broadband Policy Development" enumerated by NTIA Administrator Nancy Victory:

- facilitating deployment of new technologies by eliminating any roadblocks;
- promoting efficient facilities investment to gain the network reliability and security advantages of a diversity of facilities-based competitors;
- promoting competition in a technology-neutral way and being mindful that the market "might not always work as well or at the same pace in all areas."²

Likewise, the leadership of the FCC has acknowledged the need for major policy changes. Chairman Powell has noted that development of a national broadband policy is necessary to correct what thus far had been government policy of "lurching and reacting" to unanswered questions about broadband.³ Commissioner Abernathy has urged that policy-makers to learn from experience in the wireless and long distance service markets-that relying on market forces as much as possible offers the "best means of delivering innovative services and lower prices to consumers." She also cautioned against the "risks associated with too much regulation," noting that the FCC lost sight of the "danger of over-regulation" in its efforts to implement the Telecommunications Act of 1996. She expressed the FCC's intent "to restore the incentives for facilities-based investment that Congress intended... This means a shift away from policies that actively encourage resale as a long-term business strategy and force the unbundling of virtually every network element at rates based on TELRIC."⁴

It should be understood, though, that regulatory changes will not come easily. Many firms benefit from regulatory policies that hamper their competitors. During the past six years, CLEC's, IXC's and cable companies have been strident advocates of regulations that apply asymmetrically to only one class of service providers, the

² Nancy Victory, National Telecommunications and Information Administrator, speech to Competitive Policy Institute conference in Washington, as reported in Telecommunications Report Daily, December 6, 2001.

³ FCC Chairman Michael Powell, speech to ALTS Conference, Arlington, Va., November 30, 2001, as reported in TELECOM A.M. Vol. 7, No. 232, December 3, 2001. (Hereinafter "Michael Powell, ALTS Conference.")

⁴ FCC Commissioner Kathleen Q. Abernathy, speech to Competition Policy Institute, Washington, December 7, 2001, as reported in Telecommunications Report Daily, Dec. 7, 2001.

ILEC's. No matter that those regulations hinder innovation and investment in broadband infrastructure. Moreover, state commissions have, in some cases, gone even beyond the FCC in adopting regulations that increase obstacles and reduce incentives for investment in broadband access.

Thus, the NTIA has a critical role to play in advocating and organizing changes in public policy. Many of the necessary changes can be accomplished through administrative proceedings; in some cases, though, legislative changes will be required. In either case, the NTIA can and should be a voice for change in regulatory, tax and right-of-way policies, and by encouraging government agencies to "lead by example" in their own use of broadband services, through procurement practices.⁵ In much the same way that the government has been a key customer for other new technologies (and sponsored the early development of the Internet), the government can demonstrate the efficacy of broadband applications and thereby increase demand for more rapid investment in broadband networks.

2 Defining Broadband Access

2.1 Broadband and Digital Convergence

Both wireline and wireless networks were designed and built to carry analog traffic (voice, audio or audio-video). As the use of PCs for Internet and remote Local Area Network (LAN) access increased, end users added terminal equipment to move data over those voice networks (hence, modems to convert digital signals to analog signals, and Internet connections via "dial-up access"). This represented the first stage in the development of data networks. We are now well into the next stage: with digital convergence, carriers will need to substantially upgrade the existing infrastructure to carry voice, data and video. The expensive process of upgrading analog networks (copper twisted pair or coaxial) to provide digital access is well along, but the cost of upgrading increases markedly as one moves from the dense core of those networks in the major cities to the less dense peripheries in rural areas.

The fundamental change in these developments is from analog to digital and circuit-to packet-switched networks. This shift not only increases access speeds (typically from analog rates of 28-56 kbps to digital rates of 256 kbps –1.5 Mbps), but, even more importantly, "digital convergence" facilitates intermodal competition (i.e. competition among services provided over different technologies), and interconnection of and interoperability across modes. No wonder Chairman Powell has lamented "pervasive references to broadband as 'a simple incremental advance from telephone service.'"⁶

⁵ Bruce Mehlman, Assistant Secretary--Technology Policy, U.S. Department of Commerce, speech to Competitive Policy Institute, Washington, December 7, 2001, as reported in Telecommunications Report Daily, Dec. 7, 2001. (Hereinafter "Bruce Mehlman, Competitive Policy Institute.")

⁶ See Michael Powell, ALTS Conference.

Digital convergence also represents a technological paradigm shift, in that the rate of technological change (e.g., the rate at which bandwidth increases) will occur much faster than it did in analog networks. As this paradigm shift occurs, telecommunications will come much closer to following Moore's law,⁷ since microelectronics (and opto-electronics) will drive technological change in digital networks. This will be a major benefit: consider, for example, how long it took to evolve from 300 baud or .3 kb modems to 56 kb modems on the one hand versus the much faster rate of change from OC-3 to OC-192 and beyond. These differential rates of change flow directly from the inherent differences in analog versus digital technologies.

Thus, the fundamental distinction that should be made in defining "broadband" access is NOT transmission speed, but class of technology. On one side are legacy analog systems that deliver audio, video and voice over wires or airwaves. Even though those networks can be used to send data in digital form, they were not designed to do so. On the other side are networks that provide access by means of "data-rate, always-on, digital packet" transmission.

Thus, to capture this paradigm shift in communications and to form the basis for public policies that will promote wider and more rapid deployment, broadband access should be defined in these terms: *"any network or technology that is built or modified to carry digital data traffic and provide end users with always-on access to one or more data networks."*⁸ In short hand, "broadband" equals "digital data," where data can be used to carry an enormous range of information—words, numbers, voice, audio, pictures, video, etc. The distinguishing characteristic of digital data networks is that they enable digital devices to speak to each other in their own language.

This definition also captures the fundamental difference between users adding equipment (e.g., a modem) to allow digital devices to communicate over analog networks and modifying or building networks that are digital. In the latter case, the incentive—or disincentive—effects of public policies on technological innovation and network investment become crucial factors in the rate of deployment and adoption. In the days of analog modems, it was expenditures by consumers that determined the rate of Internet access penetration, given a ubiquitous analog network. Today, and more so in the future, investment by carriers and service providers in expanding and developing new digital networks—by whatever technology—will determine the availability of broadband access.

⁷ Moore's law states that the amount of information that can be stored on a silicon chip doubles every 18 months. More generally, Moore's law represents the doubling of functionality on electronics every 18 months.

⁸ It is conceivable that there may develop broadband digital access that is not always-on, so that should not be considered a necessary element of the broadband definition, even though broadband access is typically always-on.

As a practical matter, this definition of broadband implies access speeds equal to or greater than 256 kb downstream, the minimum speed for most cable modem and DSL users. However, this definition will not be static with respect to bandwidth: as computer processing speeds increase, larger storage capacities decrease in cost (e.g., server farms, hard-drives, RW-DVDs) and higher-bandwidth applications spread (video email, video telephony), broadband will be continuously redefined at higher speeds. At some point, we will no doubt distinguish the first generation of broadband access from the next generation.

According to this definition, one analyst estimates that about 10% of American households (10.85 million households, by end of 2001) use broadband access to the Internet and other networks (e.g., enterprise LANs for work-at-home). Of those with broadband access, 58% are using cable modem, 37% are using DSL, and 5% are using another technology (wireless, satellite). Penetration rates are expected to increase rapidly, to 35%, or 41 million households by 2005, with market shares of 53% cable modem, 35% DSL, 9% satellite and 3% optical.⁹ Other estimates of broadband access penetration and modal shares are shown in Table 1.

Consistent with the focus of the NTIA notice, the measurements in Table 1 focuses on broadband access services for the mass market. It does not include the wide range of broadband access available to large businesses. Large businesses use high capacity services whose speeds can far exceed current cable modem and DSL speeds. These services (ranging from DS-1 to OC3+) are available through multiple competitors in urban areas throughout the country.¹⁰

⁹ "Optical Access, Part II," CIBC World Markets, October 23, 2001, p. 9. (Hereinafter "CIBC.")

¹⁰ See for example, "An Analysis of Market Power in the Provision of High-Capacity Access in the Chicago LATA in Support of Ameritech's Petition for Section 10 Forbearance," Dr. Debra J. Aron, Petition of Ameritech for Forbearance from Dominant Carrier Regulation of its Provision of High Capacity Services in the Chicago LATA, CC Docket No. 99-65, March 31, 1999.

**Table 1: Estimates of U.S. Broadband Access
Penetration Rates and Modal Shares**

Investment Firm	Broadband Subscribers, 2000	Broadband Subscribers, 2005
BMO Nesbitt Burns ¹¹	Cable modem: 70% DSL: 30% Other: excluded	Cable modem: 63% DSL: 37% Other: excluded
Jefferies & Company ¹²	Cable modem: 61% DSL: 37% Other: 2%	Cable modem: 47% DSL: 44% Other: 9%
Salomon SmithBarney ¹³	Cable modem: 71% DSL: 29% Other: 0%	Cable modem: 59% DSL: 34% Other: 7%
Lehman Brothers ¹⁴	Cable modem: 67% DSL: 33% Other: excluded	Cable modem: 64% DSL: 36% Other: excluded

2.2 Broadband and Wireless Networks

Although many observers focus on broadband access over wireline networks—cable and DSL—there is every reason to believe that broadband access will also be realized over upgraded existing and newly built wireless networks as well. This has enormous implications for public policy: it means that (1) rational spectrum allocation and use policies are critical; and (2) policies that facilitate intermodal competition between wireline and wireless networks will best promote innovation and investment in broadband access facilities.

There are three major classes of wireless broadband access networks emerging: mobile, fixed and satellite. Like wireless telephone networks, both cellular and PCS mobile telephone networks were built for voice communications. The original cellular networks were analog (1G), and have been or are being converted to digital (2G), while PCS networks were digital from the start. In both cases, though, mobile

¹¹ "Residential High Speed Internet Access," BMO Nesbitt Burns, October 15, 2001, pp. 13-14. (Hereinafter "BMO Nesbitt Burns.")

¹² "DSL Equipment Industry Report, Broadband Access – When will the DSL Equipment Market Recover?" Jefferies & Company, Inc., September 2001, pp. 25-26. (Hereinafter, "Jefferies & Company, Inc.")

¹³ "Telecommunications Services, The Battle for the High-Speed Data Subscriber: Cable vs. DSL," Salomon Smith Barney, August 20, 2001, p. 1 and p. 7. (Hereinafter "SSB.")

¹⁴ "Consumer Broadband – Cable vs. DSL Chapter 2," Cable Communications Services, Lehman Brothers, p. 7. (Hereinafter "Lehman Brothers.")

networks have had only limited data capabilities, as anyone who has tried to use a mobile phone for Internet access well knows. There are two significant developments, though, that will change this markedly, namely 2.5G (general packet radio services, or GPRS) and 3G broadband digital data networks.

GPRS has already been deployed in Europe:

“The number of always-on mobile Internet users in Western Europe will grow to 110 million in 2006, from just a few million this year... One in three Western Europeans will use the latest mobile phone services technology... Business travelers will be the first to use the faster always-on connections that are offered by GPRS packet-switched technology.”¹⁵

GPRS services will soon be offered in the U.S., followed soon thereafter by 3G:

“In the United States, carriers have been given the flexibility to choose which technology to use to deploy voice, as well as advanced mobile data, services. The two largest mobile telephone carriers that currently use CDMA as their 2G technology, Verizon Wireless and Sprint PCS, announced in early 2001 that they plan to roll out cdma2000 1X as the first phase of their 3G technology rollout during 2001... The major GSM and TDMA carriers in the United States, AT&T Wireless, VoiceStream, and Cingular Wireless, are taking a different migration path to 3G technology. All three carriers plan to deploy GPRS technology during 2001, which is expected to raise data transfer speeds to between 25 and 144 kbps.”¹⁶

Moreover, a new class of service provider is emerging for mobile broadband access, those deploying wireless local area network (WLAN) technology:

“Fast access to the Internet, at speeds 100 times greater than over a GSM phone, will soon be a reality for mobile workers, according to a new report, from Analysys. Public wireless local area network (WLAN) services enable users to connect laptops and PDAs to their Internet service providers or company intranets at speeds of up to 11Mbit/s... such services are now becoming available at airports, hotels and cafes in countries such as Austria, Germany, Norway and Sweden.”¹⁷

¹⁵ “Study Sees 110 Million European Mobile Web Users by '02,” Reuters, London, December 12, 2001.

¹⁶ Annual Report and Analysis of Competitive Market Conditions With Respect to Commercial Mobile Services, 6th Report, Federal Communications Commission, FCC 01-192, Released July 17, 2001, p. 49.

¹⁷ “20 Million Wireless LAN Users in Europe by 2006,” Businesswire, November 26, 2001.

In addition to mobile wireless networks, there will be major developments in fixed wireless technologies for broadband access, using a host of alternatives, including LMDS, MMDS and WCS. Even though initial efforts in fixed wireless were not successful, there is growing evidence that further technological advances are in the offing:

"...there are currently over 210,000 subscribers to broadband fixed wireless services throughout the world, including both enterprise and residential customers. While the [Broadband Fixed Wireless Access] BFWA market has suffered somewhat, by 2005 service provider revenues from BFWA are expected to increase by 10 times its current level....'By circumventing the costs and time associated with laying expensive fiber, broadband fixed wireless technology offers an excellent means by which to capitalize on the vast potential of the broadband market,' said Becky Diercks, director of In-Stat's Wireless Group."¹⁸

"Wireless broadband operator Tele2 is close to achieving its planned target of 45 percent population coverage of the U.K. by the end of the year, and is also aiming for 65 percent coverage by the end of 2003. The carrier... offers wireless broadband services at a range of up to nine miles from a base station, at speeds of up to 2 megabits per second (Mbps)."¹⁹

"There is a growing opportunity for next-gen, fixed-wireless equipment vendors to quickly gain market share... Sprint and AT&T both recently put residential and small-business fixed wireless initiatives on hold due to difficulties with developing a viable business model. This has provided next-gen vendors with an opportunity to meet a rising demand for these solutions, thus establishing market leadership."²⁰

In addition to these terrestrial wireless developments, satellite communications service providers (e.g., DirectPC) now offer Internet access and pending network upgrades will substantially improve the quality of broadband access and services. For example, Hughes Network Services plans to have its "Spaceway" system operating in 18 months. The system will consist of three satellites providing coverage in North America and delivering high-bandwidth services to residential and business customers.²¹ Industry analysts believe that "Satellite offerings should become

¹⁸ "Troubled Times for the Broadband Fixed Wireless Access Market," Cahner's In-Stat Group, June 11, 2001.

¹⁹ "Tele2 Expanding Wireless Broadband Network In U.K.," Newsbytes, November 26, 2001.

²⁰ "The Strategis Group Provides Strong Outlook for Next-Generation Fixed Wireless Technology Vendors," PR Newswire, November 8, 2001.

²¹ "Hughes Seeks Applications to Fill Broadband Satellite Links," Telecommunications Report Daily, Nov. 15, 2001.

increasingly visible over the next 12-18 months, at first competing effectively in markets underserved by cable and xDSL and, over time, as part of a bundled video offer with strong appeal for certain customer segments....²²

2.3 Next Generation Broadband

As exciting as these developments in broadband access technologies may be, they are just the first stage. In each of these modes of broadband access, bandwidth will increase substantially, by an order of magnitude over first-generation broadband. Whereas access speeds in the analog access world was measured in tens of kilobits per second (i.e., 9.6-56 kbps), the current generation of broadband access is measured in hundreds of kilobits per second (i.e., 256-1,544 kbps). The next generation of broadband access will be measured in the thousands of kilobits, i.e., megabits. These speeds will be needed to support bandwidth intensive applications such as online gaming, video-on-demand and streaming video.²³

Until a substantial number of subscribers have adopted first-generation broadband, the development of broadband applications will not develop sufficiently to create the demand for even higher bandwidth access or applications. Given the substantial investment required to implement next-generation services, current adoption is critically important. For example, one analyst estimates that the cost to implement fiber-to-the-home, which will pave the way for next-generation applications offered by the ILEC's, will be approximately \$5,000 per subscriber assuming a 50% penetration rate. This estimate increases to over \$9,000 if the penetration is 25%.²⁴ Thus, it is crucial to adopt and implement public policies that clear away the regulatory obstacles and disincentives that are inhibiting innovation and investment in the current generation of broadband access technologies.

2.4 Implications of Broadband Definition

Defining broadband as digital data access is critical for regulatory policy: it compels us to draw a sharp distinction between voice-grade, dial-up analog circuit and data-rate, always-on, digital packet access, because the worst policy is one that intentionally or unintentionally applies analog voice regulation to the digital data services.

This technology-neutral definition of broadband will promote both intra- and intermodal competition. "The convergent nature of broadband will permit, if not foster, industry convergence and consolidation across traditional industry lines—cable television and telephone services are viewed today as separate markets, but

²² "Broadband 2001", JPMorgan H&Q, McKinsey, April 2, 2001, p. 7.

²³ CIBC, p. 9.

²⁴ CIBC, p. 23-24.

the distinction will make less sense over time. Convergence is a potential enabler of competition...”²⁵

Defining broadband as digital data access is also consistent with the NRC’s recommendation that “Broadband services should have sufficient performance—and wide enough penetration of service reaching that performance level—to encourage the deployment of new applications.”²⁶ As the NRC notes, this is critical to innovation because network access and applications development are interconnected in “chicken-and-egg” fashion:

“an application will not be made available until a critical fraction of subscribers receives a high enough level of performance to support it, yet service providers will not deploy higher-performance broadband until there is sufficient demand for it. The performance of a broadband service, therefore, [must] be good enough and improve sufficiently to facilitate this cycle and not impede it.”²⁷

Thus, investments must be made in broadband deployment now to get a critical mass of broadband subscribers. A critical mass of broadband access subscribers is necessary to justify investment in broadband applications, which in turn generate the demand for next generation broadband access. These critical masses cannot be reached if regulations impede the current deployment of broadband.

3 Primary Policy Goals & Objectives

3.1 Promoting Intermodal Competition

One of the reasons why broadband has such enormous potential for being the engine of the next wave of innovation, productivity and economic growth is that there are so many different technologies for realizing its potential. As acknowledged by the National Research Council report, “popular accounts tend to focus on which technology or players are “ahead” in broadband deployment, broadband is not a horse race between technologies, with an eventual winner.”²⁸ Even so, there is most definitely a race underway among broadband technologies, but there is no finish line to that race; rather, it is a perpetual race and will have multiple winners. In other words, this perpetual technology race among modes of communications that are using and will use competing technologies to provide broadband access to end users, over digitized copper, coaxial or fiber optic cables, or over terrestrial or

²⁵ “Broadband Bringing Home the Bits,” Committee on Broadband Last Mile Technology, National Research Council, 2001, p. S-3. (Hereinafter “NRC”)

²⁶ NRC, p. S-4.

²⁷ NRC, p. S-4.

²⁸ NRC, p. S-8.

extraterrestrial wireless networks. The long-term outcome of this perpetual technology race will be diversity in technology options, because of geographic diversity; incremental investments in existing infrastructure; continued exploitation of technology skills across modes; and varying levels of technology maturity.

For this reason, public policies that promote intermodal competition are absolutely crucial to the rapid and widespread deployment of broadband access. The critical policy for promoting intermodal competition is regulatory symmetry, i.e., reducing the regulation of ILEC's, by far the most highly regulated of all intermodal competitors. Promoting intermodal competition would stimulate innovation and investment in existing and new telecom network infrastructures, including telephone, cable, mobile wireless, stationary wireless and satellite.

Experience in surface freight transportation demonstrates the benefits of promoting intermodal competition. Prior to 1980, transport industries were regulated on the basis of modal competition, causing massive inefficiencies (e.g., empty backhauls in trucking, misallocation of traffic by mode) and financial failures (i.e., bankrupt railroads). The Staggers and Motor Carrier Reform Acts of 1980 promoted intermodal competition, leading to enormous gains in efficiency and productivity in freight transportation.²⁹

3.2 Promoting Innovation by Adopting Technology Neutrality Policies

FCC Chairman Powell has noted that the Commission needs to work hard to remain "technology agnostic" so that it doesn't promote or discourage the deployment of any broadband technologies over others. Mr. Powell has acknowledged that the FCC "runs the risk" of preferring one technology over another "thereby drying up innovation and investment in a host" of other possible solutions.³⁰ Unfortunately, both the FCC's and some states' policies appeared to have singled out one class of service providers (ILEC's), and, thereby, the technology they deploy (DSL), for regulation. All other actual and potential providers of broadband access and, thereby, all other broadband access technologies, are virtually unregulated. So, whether intentionally or not, current policies are not remotely technology neutral.

Technology neutrality is an important policy objective because it would promote a rich array of interconnected competing and complementary networks, ensuring the adoption and deployment of appropriate technologies, depending on location, applications and other factors. Neutrality would also promote technology competition

²⁹ Steven A. Morrison and Clifford Winston, "Regulatory Reform of U.S. Intercity Transportation," Chapter 14 of Essays in Transportation Economics and Policy, Brookings Institution Press, Washington D.C., 1999.

³⁰ FCC Chairman Michael Powell, speech to Fairfax (Va.) County Chamber of Commerce, November 9, 2001, as reported in Telecommunications Report Daily, Nov. 9, 2001.

to improve existing technologies and develop new ones, including technologies not yet imagined.

Finally, any policy that attempts to mandate deployment of a particular broadband access technology by a particular class of service providers (e.g., DSL by ILEC's) will be counter-productive because it will cause inefficient use of that technology (e.g., wireline over wireless in rural areas) and inhibit technological innovation and the adoption of superior technologies (e.g., requiring DSL deployment specifically will slow the development of wireless broadband access technologies).

3.3 Promoting Investment and Facilities-Based Competition

Facilities-based competition ensures robustness and redundancy and protects against network breakdowns and outages. Thus, one of the key recommendations of the National Research Council is that U.S. broadband "Policies should favor facilities-based competition over mandated unbundling... Increasing the extent of competition through facilities ownership (and voluntary arrangements to open facilities) rather than relying on regulation that mandates unbundling..."³¹

As the NRC Report emphasizes, policies that promote facilities-based competition, rather than unbundling, have substantial benefits. They (1) reduce the need for persistent regulatory intervention; (2) permit the natural (i.e., competition-shaped) character of broadband service and industry structure to be discerned; (3) promote technological diversity; (4) avoid deterring competitors from investing in their own facilities; (5) remove disincentives to new investment by incumbents; (6) avoid costs and complications of coordination between incumbents and competitors; and (7) facilitate technical optimization of total bandwidth.³²

So, facilities-based competition should be a high priority policy objective, but it should definitely not be limited to "same technology" or intramodal competition. Given actual and potential developments in broadband access across multiple technologies, we should remove policy obstacles and disincentives to investment in any technology, thereby promoting facilities-based competition across those technologies.

3.4 Promoting Widespread Deployment of Broadband Access

"Universal" broadband access is an important long term objective, but attempts to reach this objective in the short-to intermediate-run by "forcing" deployment, especially if targeted at one class of service providers, will be counter-productive. Rather, widespread broadband access can best be achieved through intermodal, facilities-based competition, which will stimulate the use of appropriate technologies

³¹ NRC, Recommendation 2.1, p. S-14.

³² NRC, pp. S-14-15.

under different circumstances (e.g., cable modems or DSL in cities and suburbs, WLANs on college campuses and office parks, satellite in rural areas).

The worst possible policy would be one that extends the traditional regulatory regime of analog voice communications to data services and broadband access, however noble the motivation may be. Attempting to achieve some kind of “universal broadband service” by regulating one class of service providers—ILEC’s—would substantially reduce their incentive to invest in infrastructure. That, in turn, would reduce the rate of infrastructure investment by their intermodal competitors, since a major stimulus for deploying broadband is meeting competition.

Thus, I strongly concur with the NRC recommendation:

“[Because] Some forms of [government] intervention to expand access... may affect private investment decisions, it should be undertaken with great care in this nascent area in order to avoid unintended consequences.”³³ [We should] “defer development of a universal services policy for broadband access until the nature of broadband services, pace of development, distribution of access and social significance become clearer.”³⁴

At the same time, it may be desirable to provide public funding for broadband access in school libraries, senior centers and other public access points, so that individuals without a computer or desire for broadband access at home can gain broadband access in other convenient locations. Promoting broadband access in public places (e.g., schools, libraries, senior centers) through public funding will enable access by lower income or lower use households. Such support is currently being provided through the federal government’s e-rate program, which committed nearly \$6 billion between 1998 and 2000 to schools and libraries for the implementation of advanced services.³⁵ Additional targeted government subsidy programs may well be useful in further meeting the need for public broadband access and stimulating demand for development of broadband applications. Any such program, however, should be funded through general revenue sources or, at the least, through a tax that is technology- and competitively-neutral.

3.5 Eliminating Regulatory Obstacles and Disincentives

As noted in the introductory section, there is a large “disconnect” between our policy objectives and our policies toward broadband access. In an age of digital convergence, too many of our policies are geared for a voice world. I agree completely, therefore, with the assessment of the National Research Council:

³³ NRC, p. S-13.

³⁴ NRC, p. S-21.

³⁵ See “The Schools and Libraries Support Mechanism-2000 Annual Report,” <http://www.universalservice.org/reports/2000/pg12.asp>, downloaded December 14, 2001.

“The present policy framework for broadband, which revolves around the Telecommunications Act of 1996, is problematic and unsuited in several respects to the new era of broadband services... the central role of the Internet in the communications landscape was not fully anticipated... the Telecommunications Act of 1996 devotes much of its attention to the voice telephony market and maintains distinct rules for the various communications networks (telephone, cable, cellular, broadcasting, and so on).”³⁶

Thus, “problematic and unsuited” regulation is a major inhibitor of investment in broadband access networks. While less regulation is not a policy objective *per se*, it is the best means of achieving other policy objectives. Unfortunately, due to the long history of telephone regulation, and specific provisions of the Telecommunications Act of 1996, there has been a strong tendency to extend regulation from voice-analog services into broadband access services.

Hence, while I agree with the thought underlying the National Research Council’s recommendation to “defer new regulation in the early stages,”³⁷ it is not sufficient to merely defer *new* regulation—it is imperative that we repeal *existing* regulations that have been wrongly applied to broadband access services and—unless removed—will inhibit and distort innovation and investment in broadband access networks and services. Moreover, unless and until we decrease regulatory obstacles to facilities investment and intermodal competition in the current generation of broadband access, we will not get to the next generation of data access (fiber-to-the-home, broadband wireless). Slowing down investment in the current generation of broadband access will impede the development of the next generation.

What is especially harmful about existing regulation is that it is so highly asymmetric: for all practical purposes, only one set of service providers and, hence, one type of broadband technology is regulated, namely ILEC’s and DSL broadband access service. Other providers of broadband access are barely regulated, or not at all. That disparity in regulatory treatment of direct competitors in the market for broadband access services distorts competition and technological choices.

In assessing the weight that should be given to reducing regulation of broadband access, it should be noted that regulation is particularly harmful when applied to high technology industries, i.e., those in which technological innovation is the driving force for investment and deployment. Rapid advances in CPUs, PCs and other digital devices occurred because those “markets for innovation” were unconstrained by regulation. As such, chip manufacturers and PC manufacturers had every incentive to produce the fastest technology available. The net result of the competitive market is that consumers can now purchase a variety of PCs for less than \$600 that have capabilities that far exceed most business computer systems a decade ago. Given

³⁶ NRC, p. S-12.

³⁷ NRC, p. A-2.

the potential rate of technological change and the dramatic increases in intermodal competition, regulation of broadband services would be especially harmful because of its long-term dynamic effects on the “market for innovation.”

4 Disincentives for Investment in Broadband Access

4.1 Promoting Investment in Broadband Access Facilities

As discussed in Section 2, there are many different technologies for providing broadband access, and Section 3 explained why a national broadband policy should be technology neutral and should promote facilities-based intermodal competition. Unfortunately, current policies do neither. Even worse, there is a very real threat of policies—especially state regulation of ILEC’s—taking a turn for the worse. The prices for UNE-P (unbundled network elements-platform) are already below cost, but some states are considering lowering them even further. While the FCC has found that packet switching and DSL facilities needs to be unbundled in only limited circumstances, one state has, and other states are considering, requiring additional unbundling of advanced services. So, while public policies should be moving in one direction to achieve broadband policy objectives, they are actually moving in the opposite direction, toward even greater bias against DSL technology and even less incentive for innovation and investment in broadband access. It is imperative that NTIA marshal its resources to reverse this trend.

Unfortunately, there is a strong misperception that regulation is not hindering investment in broadband. Defenders of current regulatory policy cite the enormous investments ILEC’s have made in deploying DSL. So, for example, the FCC has argued that:

“Notwithstanding the fact that the incumbents have been on notice that they could be required to unbundle facilities used to provide advanced services, the incumbents have announced aggressive rollout plans for xDSL service. In fact, a recent financial analyst’s report indicates that advanced data services currently comprise an average of 9.9 percent of the revenues of the BOCs and GTE... We find these statistics to be significant because they demonstrate that the development of competition, and the threat of losing revenue and customers to carriers offering advanced services, provides a powerful incentive for carriers to invest.”³⁸

That is false logic for three main reasons. First, given the clear directive of Section 706 of the Telecom Act, it was reasonable for ILEC’s to assume—and make capital budgeting decisions based on that assumption—that regulators would not require

³⁸ In the Matter of the Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, CC Docket No. 96-98, Federal Communications Commission, Third Report and Order and Fourth Further Notice of Proposed Rulemaking (FCC 99-238), November 5, 1999, ¶138.

mandatory unbundling or TELRIC pricing of DSL equipment. Given recent regulatory developments, particularly at the state level, that is no longer the case.

Second, the initial upgrades from an analog network to a digital network can be made relatively easily and inexpensively. The cost of that upgrade goes up dramatically, however, as one moves to the edges of the network. Thus, the ILEC's have made the less expensive upgrades to provide broadband access on a substantial share of their networks; the question now, though, is whether they have sufficient incentives for the additional investments to push the digital upgrade further out into their networks. Given regulatory indisincentives, that is by no means assured.

Third, there has been a decided shift in capital markets, from emphasizing growth to corporate cash flow and earnings:

Ernst & Young reports many analysts in the fixed-line telecom market have altered their valuation strategy to focus heavily on free cash flows. Non-financial indicators of growth largely have been discarded as performance indicators, and analysts now are focusing on incremental achievements rather than long-term growth projections.³⁹

Not surprisingly, this change in financial performance metrics already may be affecting investment:

"We believe ILECs in general are not being as aggressive as they were last year towards DSL deployment. At the present time, the investment community is focused on EPS and positive cash flow in determining stock valuations rather than growth in subscribers and revenues. In general, it takes two years for an ILEC to become cash flow positive on a DSL subscriber. Hence, slower subscriber growth improves near-term EPS and cash flow."⁴⁰

There can be little doubt that negative regulatory decisions, and growing uncertainty about even more unfavorable regulatory decisions, are harming ILEC investment incentives:

"RBOCs... are the major providers of residential high-speed Internet access via DSL in the U.S... but penetration rates are low relative to cable companies... due to... unfavourable regulatory decisions with respect to wholesale DSL services that continue to inhibit deployment."⁴¹

³⁹ "Analysts have altered their valuation strategy to focus heavily on free cash flows," TelecommNOW News Daily 11/30/2001.

⁴⁰ Jefferies & Company, p. 36.

⁴¹ BMO Nesbitt Burns, p. 5.

“Cable modem’s advantage today is that it does not have to share or unbundle its networks as do the ILECs. Lack of regulation provides a clear advantage [for cable] in service deployment.”⁴²

“While regulatory developments continue [to] favor cable MSOs, the constraints on RBOCs are increasing. Line sharing with other competitive local exchange carriers (CLECs) has been required for the Bells... Moreover, the establishment of separate subsidiaries for DSL operations has been required.”⁴³

Even if investment disincentives only reduce investment at the margin, they can substantially slow deployment and adoption because of the effect on (1) competitive dynamics and (2) network interdependencies between broadband availability and applications development (“the chicken and egg problem”). Thus, in the remainder of this section, we will review the disincentive effects of specific regulatory policies that are hampering investment in broadband access and must be changed to realize our national policy objectives.

4.2 Disincentive Effects of Regulated Rates for Interconnection, Resale & UNE’s

As a theoretical proposition, setting prices of unbundled network elements (UNEs) at TELRIC can facilitate entry and promote investment in facilities-based competition. As a practical matter, it has done anything but that. The predominant use of TELRIC has NOT been in the pricing of UNEs, but in the pricing of UNE-P, which has nothing to do with unbundling and everything to do with providing a wholesale price arbitrage opportunity for entrants. Consequently, UNE-P has become a major impediment to infrastructure investment and facilities-based competition.

As applied by state commissions, TELRIC costs have been systematically underestimated (see 4.3.), so UNE prices are typically well below true economic costs. The problem has been exacerbated by numerous “compromises” in which ILEC’s “voluntarily” lower UNE prices to gain regulatory approval on unrelated matters (e.g., merger or §271 approval). Moreover, because some states have set UNE prices even further below costs than others, there is a growing tendency to hold up the lowest UNE prices in an ILEC region as the standard for UNE prices in other states, which only spreads and increases the harm of poor regulatory decisions.

Thus, the financial evidence indicates that UNE prices are below cost, in fact, “UNE prices are at a deep discount to Regional Bell’s costs, as reflected on their financial

⁴² Jefferies & Company, Inc., p. 14.

⁴³ SSB, p. 3.

statements.”⁴⁴ If the trend toward lower UNE prices, and more extensive unbundling requirements continues (e.g., DSL unbundling), the harm will grow exponentially: ILEC’s will not be able to tolerate the much larger losses (due to UNE prices below costs) if the quantity purchased increases substantially.⁴⁵

If ILEC losses due to higher “sales” of UNE-P at prices below costs, that will assuredly reduce their incentives and ability to attract capital to invest in network upgrades, including broadband. Moreover, pricing UNE-P below costs reduces incentives for all infrastructure owners to invest, by setting an artificially low “cost” for non-facilities based competitors. An MSO considering investments in plant upgrades to provide cable telephony faces competition from a CLEC or reseller using UNE-P, which reduces expected revenues and therefore makes the investment that much less likely.

4.3 Disincentive Effects of TELRIC

To the extent that TELRIC provides an accurate estimate of the actual economic cost of building a network, and to the extent that TELRIC-based prices provide for recovery of ACTUAL costs, TELRIC is a useful tool for establishing UNE prices. In many jurisdictions, though, TELRIC has not been implemented in a way that fully compensates ILEC’s for their costs. TELRIC estimates are based on complex cost models with a large number of assumptions and inputs. Unrealistic and inconsistent assumptions and inputs have resulted in unrealistically low TELRIC estimates.

There is also a fundamental flaw in the application of TELRIC costs in determining UNE prices (in addition to the biases below). Even though the TELRIC cost models adopted by most states use excessively long depreciation periods, there is typically no requirement that competitors make commitments on the duration of their UNE purchases. So, an ILEC may have to make very long-term investment commitments to provide UNE’s to CLEC’s, but the CLEC’s can buy those UNE’s for a short period of time, then switch over to their own facilities (or lease facilities from another CLEC), stranding the ILEC’s investment.

But the biggest problem with TELRIC pricing is that, even if it is conceptually sound for pricing network elements, it is not being used mainly for that purpose: its main application is in the pricing of network services—UNE-P—for which it is not intended and for which it is conceptually wrong. The Telecom Act provided two different pricing mechanisms for good reason: a resale discount is the appropriate method for pricing services; correctly estimated TELRIC is correct for pricing elements.

⁴⁴ “Status and Implications of UNE-Platform in Regional Bell Markets,” Kovacs et al, Commerce Capital Markets Equity Research, November 12, 2001, p. 1. (Hereinafter “Kovacs et al.”)

⁴⁵ Kovacs et al, p. 1.

“UNEP is physically similar to resale. In each case, the CLEC uses the ILEC network to provide service to the end-user and essentially limits its own functions to marketing, inputting the order into the ILEC’s systems, and billing.”⁴⁶

“UNEP can be more economic, where the customer’s retail bill is high enough. Thus, CLEC’s have generally preferred UNEP to resale as an entry mechanism, where they have felt entry was economic at all. But they have generally limited themselves to targeting states in which UNEP prices are low and then cherry-picking customers within those states.”⁴⁷

Not surprisingly, local competitors are now arguing that state commissions should mandate unbundling even where the FCC does not. In Texas, for example, CLEC’s and resellers have petitioned the PUC to mandate unbundling of local switching in major metropolitan areas, even though the FCC has found that it is not required. It is ironic that competitors seek “unbundling” when they are not even buying unbundled switching. Rather, they seek to maintain the existing price arbitrage opportunity, of having both a resale discount and a UNE-P wholesale price available.

In addition, those same applicants are attempting to ratchet down the UNE-P price by recalculating TELRIC, based on the premise that the costs of “best available technology” have decreased since the currently used TELRIC costs were estimated. But it is completely inappropriate to periodically reapply TELRIC as they request. As estimated in Texas and every other jurisdiction, TELRIC is based on the unrealistic assumption that the entire incumbent network is replaced with a single-vintage of best available technology. Reapplying TELRIC every few years is directly at odds with that assumption and the long depreciation lives used in previous TELRIC estimates.

Because telecom is a network industry characterized by large-scale durable assets and rapid technological change, re-applying TELRIC periodically would put TELRIC on a declining cost trajectory that is not achievable, chilling investments from all providers. That downward spiral would have a disastrous effect: “If [there were] radical reductions in the price of UNE-P, two things would happen. CLEC’s would find UNE-P entry economic and would begin to enter the market very actively. The RBOC’s, in turn, would quickly become uneconomic, as they would be forced to serve customers at prices that are at an 80%-90% discount from the cost on their financial books.”⁴⁸

⁴⁶ Kovacs et al, p. 2.

⁴⁷ Kovacs et al, p. 2.

⁴⁸ Kovacs et al, p. 7.

It would be even more inappropriate to apply TELRIC to new investments used to provide new network capability, such as broadband. By its nature, unbundling reduces incentives for investment, but that disincentive effect is increased exponentially when rapid technological change can cause early technological obsolescence.⁴⁹ Consider the effect of requiring Intel to unbundle its manufacturing plants and price those unbundled elements at TELRIC. Even worse, imagine requiring Intel to sell its Pentium 4 chips to its competitors at downward-biased TELRIC prices—which is the correct analogy to UNE-P pricing of DSL. Can anyone imagine that Intel would continue to spend such a large share of its revenues on R&D, or make even riskier investments in new semiconductor manufacturing facilities? Of course not.

4.4 Disincentive Effects of Uncertainty of Investment Returns

As a matter of economic principles and empirical observation, there can be no doubt that increasing the risks and uncertainties associated with investments decreases incentives to invest. This is especially true of large-scale investments in durable assets, such as investments to extend DSL capabilities into wireline networks.

Even without required unbundling, there is a great deal of risk associated with the substantial investments required to extend and enhance broadband availability (estimated at over \$10 billion⁵⁰). These risks stem from both the supply and demand side of the business. For example, on the supply side, ILEC's face challenges in conditioning lines, deploying equipment in outside plant, and managing customer acquisition costs.⁵¹ On the demand side, ILEC's face risks associated with customer take-rates, customer churn and price stability. These "normal" risks of providing broadband service are reflected in the fact that at approximately 30% of broadband subscribers, DSL is significantly behind cable modem service in market penetration.

Adding regulatory requirements that increase the cost for the incumbent and/or artificially reduce the cost to competitors will dampen ILEC investment in DSL facilities. Even minimal unbundling requirements increase risk and uncertainty increases, making DSL investments less attractive. Extensive unbundling dramatically decreases ILEC control over its assets and increases the degree of uncertainty associated with its investments. Many technical and operational risks associated with the unbundling of DSL facilities were articulated by SBC in a recent proceeding in Illinois including: (1) premature exhaustion of bandwidth of the Next Generation Digital Loop Carrier (NGDLC) and line card slots in remote terminals (RTs), (2) additional cost associated with provisioning and maintaining the line cards

⁴⁹ Early technological obsolescence occurs when the economic life of an asset is less than its physical life, due to rapid technological change.

⁵⁰ Lehman Brothers, p. 3.

⁵¹ BMO Nesbitt Burns, p. 36.

in the RTs, and (3) additional costs associated with coordination among carriers in the repair and maintenance processes.⁵² These risks increase capital costs and operating expenses, and could affect an ILEC's ability to provide service to its end users.

In addition to capital budgeting effects, as reflected in company business case analysis, regulations disincent investments more generally through capital market effects. The willingness of investors to buy debt or equity in companies that are investing in long-lived assets—as required to build broadband access networks — depends critically upon their expectations of future returns. By preventing firms from earning adequate risk-adjusted rates of return—or merely through uncertainty about what regulations will apply in the future—those expectations are reduced, and the cost of capital increases and/or less capital is available to the firm for investment. Today, ILEC's are facing pressure from capital markets, which is causing them to slow down DSL deployment.

“We believe ILEC's in general are not being as aggressive as they were last year towards DSL deployment. At the present time, the investment community is focused on EPS and positive cash flow in determining stock valuations rather than growth in subscribers and revenues. In general, it takes two years for an ILEC to become cash flow positive on a DSL subscriber. Hence, slower subscriber growth improves near-term EPS and cash flow.”⁵³

The disincentive effects of existing regulatory policies are just one part of the problem; investment outlooks must also factor in uncertainty about future regulations, including regulatory “re-contracting.” Thus, an FCC decision to exclude DSL line cards from unbundling requirements does not necessarily eliminate uncertainty on that point, so long as the regulatory regime leaves open the possibility that such unbundling might be required in the future.

“Widespread deployment of DSL has been slow to develop due to a combination of factors, including...state government legislation in the U.S. that may require the ILECs to unbundle DSL, further reducing the economics...”⁵⁴

“Looking ahead, DSL penetration is expected to remain higher in Canada [due to]... increased regulatory uncertainty in the U.S. with respect to DSL

⁵² Covad Communications Company Petition for Arbitration Pursuant to Section 252(b) of the Telecommunications Act of 1996 to Establish an Amendment for Line Sharing to the Interconnection Agreement with Illinois Bell Telephone Company d/b/a Ameritech Illinois, and for an Expedited Arbitration Award on Certain Core Issues; Rhythms Links, Inc., Illinois Commerce Commission, Opinion, February 15, 2001.

⁵³ Jefferies & Company, Inc., p. 36.

line sharing. For example, despite a recent U.S. FCC ruling that DSL services provided by the ILECs are not required to be unbundled into their various elements, some states have introduced legislation that may require the ILECs to do so. This has the potential to reduce DSL economics of these areas. Cable companies are not required to provide network access to the third parties at this time.”⁵⁵

Unfortunately, regulators, such as the Illinois Commerce Commission (ICC), have greatly heightened broadband investment uncertainty by decisions or suggestions that they may compel extensive unbundling of DSL facilities. As explained by SBC in reference to the Illinois Arbitration Decision on Rehearing,

“The recent ICC decisions concern Ameritech’s plans to expand the availability of high-speed DSL through a network of remote terminals (Project Pronto). The decisions established conditions under which the terminals must be deployed. Complying with the ICC’s decisions could cost SBC more than one-half billion dollars, making the DSL product uneconomical for both Ameritech and its competitors. In addition, the decisions are technologically unfeasible, as they exceed the space capacity and technical requirements of broadband remote terminals.”⁵⁶

“‘We have shut down Project Pronto in Illinois,’ he said [James Shelly, president of external affairs for Ameritech], noting that the company would continue to add customers where DSL is already available, but that it also has halted mass marketing in Illinois.”⁵⁷

In a letter to Congress, SBC chairman and CEO Ed Whitacre warned the ICC decision would cost “hundreds of millions” to implement and would slow the deployment of broadband services to consumers.⁵⁸

While the ICC revised its original decision requiring extensive unbundling of SBC’s Project Pronto network, its decisions greatly heightened uncertainty associated with ILEC broadband investment.

Perhaps the most serious long-term effect of such regulatory barriers and disincentives to infrastructure investment is on the rate of technological change. The

⁵⁴ BMO Nesbitt Burns, p. 36.

⁵⁵ BMO Nesbitt Burns, p. 20.

⁵⁶ “Ameritech Requests ICC Rehearing to Expand Broadband Access in Illinois,” *Ameritech Press Release*, April 13, 2001, <http://www.ameritech.com/content/0,3086,196-20010413-01,00.html>.

⁵⁷ “Ameritech halts DSL upgrades; Project Pronto shut down in dispute with ICC concerning use of network,” *The State Journal-Register*, March 30, 2001.

⁵⁸ *Id.*

“dynamic” effects of poor public policies can well dwarf the “static” effects, even though they may be less observable. If facilities-based service providers invest less in network upgrades due to an unacceptable level of uncertainty over returns on that investment, that means that equipment vendors will make fewer sales and invest less in R&D, thereby slowing the rate of technological change.⁵⁹ Thus, regulatory decisions—however well-intentioned—can cast a wide and long shadow over investment in broadband access, thereby reducing the rate of productivity gains and economic growth.

4.5 Disincentive Effects of Retail Price Regulations

The continuing regulation of basic exchange services has held retail prices below costs in many cases. Thus, regulated rate structures bias and distort not only consumer choices, but also investment decision by facilities-based providers:

“Retail prices are not based on costs that are relevant to any particular customer class. Actually and perversely, they are set counter to the costs relevant to particular customer classes. High-cost residential customers receive low-priced service. Low-cost business customers receive high-priced service. This is hardly news—everyone who deals with telecommunications is aware of the cross-subsidies that are embedded in the system.”
[Regulators face a dilemma]. “If they continue to ratchet down UNEP prices to the point that they become attractive to the CLECs, they will be forcing RBOCs to wholesale their network at rates that are significantly below the costs that the financial community looks at.”⁶⁰

Rate restructuring, which is the obvious economic solution to this problem is not politically viable in most states.⁶¹ Retail rates structures that are misaligned with costs disincentivizes investment in telecom infrastructure, NOT ONLY by ILEC's, but also by CLEC's, MSO's and mobile carriers and other facilities-based service providers. Mobile carriers would compete even more directly with ILEC's for local exchange services, but facing wireline basic rates below cost reduces carriers' incentive to expand mobile network capacity to improve their capacity and quality of service in homes or to invest in network upgrades to provide wireless internet access. Likewise, MSO's can compete directly with ILEC's in basic exchange services, but an MSO considering investment to upgrade plant to provide cable telephony faces artificially low retail prices that an ILEC is required to charge.

⁵⁹ Harris, Robert G., "R&D Expenditures by the Bell Operating Companies: A Comparative Assessment," invited paper, Twenty-Third Annual Conference, Michigan State University Institute of Public Utilities, Williamsburg, Virginia, December 9, 1991; MSU Public Utility Conference Proceedings, 1993.

⁶⁰ Kovacs et al, p. 6.

⁶¹ Kovacs et al, p. 1.

As relates to broadband, this presents an enormous barrier to consumer adoption of broadband and, therefore, the expected returns on investment in broadband access facilities. Under retail rate regulation, customers face a biased choice between dial-up Internet access (with unlimited local calling) and broadband access, by DSL, cable modem, satellite, fixed wireless or any other means.

“Dial up Internet services will continue to be the primary source for residential high-speed Internet subscribers, particularly as pricing for low-speed unlimited access remains at a substantial discount.”⁶²

This biased choice reduces broadband take rates, which reduces returns on and incentives for investments in broadband access. Because of the “chicken and egg” relationship between broadband access and broadband applications development, slower consumer adoption rates on access slows applications, which further distorts the choice between narrowband and broadband access. In order to achieve our national policy objectives of rapid, widespread deployment of broadband access and applications, we will have to remove—or at least reduce—the magnitude of this distortion.

5 Regulatory Policies for Broadband Access & Services

The nation faces a crucial choice. There is a major “disconnect” between our public policies and our policy objectives, namely to promote the rapid deployment and adoption of broadband access and achieve the economic, social and technological benefits of the “next wave” of the information society. The current regulatory regime is highly asymmetrical among classes of service providers and, therefore, is not technology neutral. Current regulations—and the threat of even more onerous regulations—substantially reduce incentives for investment in broadband infrastructure. To achieve our public policy goals and objectives, we must change our regulatory policies toward broadband access. Moreover, current regulations are inhibiting and distorting intermodal competition, which is completely contrary to the nation’s long-run interests in widespread broadband networks and services. Thus, I fully concur with the NRC’s recommendation that we should:

“Structure regulation to emphasize facilities-based competition and encourage new entrants... The policy goal, simply put, should be to increase the extent of competition through facilities ownership (and voluntary business arrangements to open facilities) rather than through long-term reliance on mandated unbundling.”⁶³

The best policy to promote rapid technological innovation and investment in broadband access and services is to allow market forces—technology competition and

⁶² BMO Nesbitt Burns, p. 10.

⁶³ NRC, p. A-2.

intermodal competition—to determine the course of development and deployment. To achieve our national policy objectives and the potential benefits of the digital revolution, it is imperative that we at least reduce the completely different regulatory treatment of ILEC's versus other broadband access providers. The most heavily regulated providers of advanced services today are the Regional Bell Operating Companies (RBOC's). RBOC's are subjected to a whole host of the regulatory obligations that are not applied to any of the their competitors in the market for broadband access:

- RBOC's must allow competitors to collocate on their premises;
- RBOC's must, under certain circumstances, unbundle their network for competitors to use to provide broadband;⁶⁴
- RBOC's must allow access to the loop facilities on a shared basis with their competitors;
- RBOC's are prohibited from providing broadband across LATA boundaries until they receive FCC 271 approval to provide voice services across these boundaries.

In addition, some RBOC's are subjected to other regulatory requirements imposed by state regulators under varying state laws or varying interpretations of the Telecom Act or FCC decisions pursuant to the Act. Some RBOC's are also subject to regulatory requirements that have been imposed through regulatory decisions that are unrelated to broadband policy, such as merger and 271 applications (e.g., separate affiliate requirements on advanced services).

Even when the FCC has limited ILEC regulations in their application to broadband facilities or services, states have sometimes gone beyond. Yet, several states have dramatically increased uncertainty by requiring (or indicating that they may require) unbundling of broadband facilities (e.g., packet switching) even after the FCC decided that

“Incumbent LECs are not required to unbundle packet switching, except in a limited circumstance. Competitive LECs are actively deploying packet switches to serve high-volume customers, and are not impaired in their ability to offer service to such customers without access to the incumbent LEC's facilities. Competitive LECs are impaired, however, in their ability to provide

⁶⁴ The Commission established certain circumstances when an ILEC must unbundle its packet switching network elements including the digital subscriber line access multiplexer (“DSLAM”). The test to determine when unbundling must occur is set forth in ¶313 of the UNE Remand Order. See In the Matter of Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, Third Report and Order and Fourth Further Notice of Proposed Rulemaking, CC Docket No. 96-98, 15 FCC Rcd 3696 (1999). (Hereinafter, “UNE Remand Order.”)

services to small-volume users without access to unbundled packet switching. Nonetheless, we consider the other goals of the Act in making our unbundling determination, and conclude that give the nascent nature of the advanced services market and the Act's goal to provide incentives to all carriers to invest and innovate, incumbent LECs are generally not required to unbundle packet switching."⁶⁵

In spite of this well-founded reasoning, the Illinois Commerce Commission earlier this year ordered SBC to unbundled packet switching, and other states are considering doing so as well. While the ICC modified its decision several months later, there is no question that increased uncertainty caused by these decisions casts a pall on ILEC broadband investments. Moreover, these decisions have enormous negative spillovers to other states and the nation as a whole. By acting in a manner contrary to investment and intermodal competition in broadband access, individual states can reduce the rate at which broadband access and applications develop.

It has been historically demonstrated that adopting policies to substantially reduce regulatory asymmetry between intermodal competitors can generate substantial public benefits. As I wrote just prior to the Telecommunications Act of 1996:

Through the lens of history, we will see the basic similarity between the emergence of competition in telecommunications on the one hand and freight transportation and financial services on the other. In both cases, regulators were slow to recognize the development of competition from new modes of transportation (motor carriers competing with rail carriers) and financial services (diversified financial service firms like Merrill-Lynch competing with banks). Like LECs, the incumbent railroads and banks were regulated very differently from their competitors, who exploited regulatory asymmetries and sought to maintain their competitive advantage through public policy advocacy. Consequently, in both industries, public policies lagged behind changes in the marketplace, with regulatory asymmetries causing economic harm to the incumbent service providers, to their customers, and to the economy as a whole. As evidence of the economic harm, induced inefficiencies, and financial failures of incumbents increased, policymakers finally responded by reducing or eliminating regulatory asymmetries between incumbents and their competitors. Both industries benefited as regulations became more symmetric. Just as the poor performance of these industries under traditional regulatory regime illustrates the economic costs of regulatory asymmetry, the substantial improvements in industry performance

⁶⁵ UNE Remand Order, Executive Summary, p. 14.

following regulatory reform illustrate the economic benefits of regulatory symmetry.⁶⁶

As noted at the outset of this paper, Section 706 of the Telecom Act clearly directs the Federal Communications Commission to remove regulatory obstacles that inhibit broadband investment and competition. Fortunately, the Act provides a means of moving substantially in this direction. Section 10(a) of the Act of 1996 directs the Commission to forbear from any regulation (1) that is not necessary to ensure that charges, practices, classifications, or regulations by, for, or in connection with a carrier or service is just and reasonable; (2) enforcement of the regulation is not necessary for the protection of consumers; and (3) forbearance is in the public interest.

The key empirical determination in implementing this legislative provision is a finding that ILEC's are "non-dominant" in the market for broadband access and services. Of that there can be no doubt. There are many modes of providing broadband access and even more on technological horizon. The DSL broadband access technology being deployed by ILEC's has a lower share of the market than cable modems. Deployment of new broadband access technologies by satellite, 3G and WLAN service providers will further stimulate intermodal competition.

Indeed, as a matter of economic policy, Section 10 of the Act requires that all broadband access service providers be treated the same. As no provider of broadband access is a "dominant carrier," then any regulation of broadband access service must apply to all technologies and all classes of service provider. In other words, rules imposed on ILEC's must also be imposed on competitors. But it would make no sense to regulate all broadband access providers. The only rational implementation of Section 10 is non-dominant regulation, the elimination of broadband UNEs and forbearance on pricing.

Hence, the NTIA should urge the Commission to declare that no carrier is "dominant" in the provision of broadband services and to forbear from regulating those services. The NTIA should also advocate that the Commission use the necessary and impair standard of § 251(d) to find that the unbundling of broadband facilities—specifically, Line Sharing⁶⁷ and Line Splitting⁶⁸—is not necessary and is contrary to the public

⁶⁶ Harris, Robert G., "Toward Regulatory Symmetry in Local Exchange Services: Lessons from Financial Services and Freight Transportation," presented to the Industrial Organization Society, San Francisco, January 5, 1996, pp. 3-4.

⁶⁷ In the Matters of Deployment of Wireline Services Offering Advanced Telecommunications Capability and Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, CC Docket Nos. 98-147 and 96-98, Third Report and Order in CC Docket No. 98-147 and Fourth Report and Order in CC Docket No. 96-98, 14 FCC Rcd 20912 (1999) ("Line Sharing Order").

⁶⁸ In the Matter of Deployment of Wireline Services Offering Advanced Telecommunications Capability and Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, CC Docket Nos. 98-147 and 96-98, Third Report and Order on Reconsideration in CC

interest. Implementation of these changes will go a long way toward equalizing competition in the broadband market.⁶⁹

Regulatory forbearance of broadband should also apply to all services provided over it. If the nation wants to promote digital convergence and the co-development of broadband access and applications, it is imperative that policies do not distinguish among—much less discriminate against—broadband service providers based on “legacy” considerations. Specifically, this means that voice services provided over broadband access networks should not be regulated merely because voice service has traditionally been regulated.

Given recent decisions by state regulators, the NTIA should encourage the FCC to employ the clearest and strongest possible language in articulating the empirical support and reasoning for these decisions. Given the dual jurisdiction of telecommunications regulation, the FCC cannot prevent the states from making decisions that are contrary to the national interest. But both the NTIA and the FCC can make clear the national interest in removing regulatory obstacles and increasing incentives for innovation and investment in broadband access and applications.

6 Other Public Policies to Promote Broadband Deployment

6.1 Promoting Broadband through Tax Policies

Federal, state and local tax policies can work together as a disincentive or a barrier to broadband deployment. The decision as to where and when broadband services are deployed are influenced by the tax structure. As in any business, the decision is based on cost associated with the expected revenue stream.

Broadband deployment is limited by imposing: 1) a heavy tax burden on telecommunications companies, driving up the cost to build out advanced infrastructure, and 2) a heavy tax burden on the broadband services that are sold, driving up the price and limiting the available revenue stream to support the build out. Examples of heavy tax on the cost to build out advanced infrastructure are long depreciation lives that do not reflect technological changes (including the risk of obsolescence) occurring in the industry and, in some states, tax assessment ratios that are much higher than those for general business property. Examples of heavy tax burdens on broadband service revenues include gross receipts taxes, franchise fees and higher than general sales tax rates imposed on the services.

Docket No. 98-147, Fourth Report and Order on Reconsideration in CC Docket No. 96-98, 16 FCC Rcd 2101 (2001) (“Line Splitting Order”).

⁶⁹ Non-dominant forbearance of ILEC’s broadband services would reduce, but not eliminate regulatory asymmetry. For example, ILEC’s provide “open access” over their broadband access services (i.e., consumers can choose a different ISP), whereas most other broadband access providers do not (i.e., they only offer a bundled service of broadband and Internet access).

Tax policy should also be structured to be competitively neutral, which is not always the case. Cable provides a competing service to ADSL yet state and local governments tax the equivalent competing services differently. Converging industries/services should all be taxed the same to allow the free market to operate effectively and efficiently.

In addition, there are only a limited number of states that offer incentives to build out the advanced infrastructure. The old economy was built on manufacturing, and states recognized the benefits of giving investment tax credits and/or exempt the purchase of the equipment used to produce taxable goods. The new economy is built on the free flow of information. Yet there are only a limited number of states that provide investment tax credits or exempt the purchase of infrastructure equipment used by telecommunications companies to provide taxable services. The concept of government partnering with the manufacturing industry to drive the old economy has not been widely embraced to build up the new economy's infrastructure – telecommunications.

The National Conference of State Legislatures (NCSL) has been studying e-commerce taxation, including the taxation of telecommunications services, for nearly two years, and progress has been made by the various state legislatures updating their tax laws. Florida, for example, has made great strides by replacing their state and local gross receipts taxes on telecommunications services with a statewide excise tax on all communications services (including cable). However, Florida's new combined state and local tax rate on communications is still almost double the general business sales tax rate. In summary, efforts to deploy advanced broadband services continue to be stifled by federal, state and local tax policies.

6.2 Promoting Broadband through Right-of-Way (ROW) Policies

Public rights-of-way are essential for the development of a municipality that is capable of providing benefits to its residential and business members. Just as rights-of-way on top of streets and highways are used for conveyance of people, goods, and services, rights-of-way below and beside streets and highways are used for the conveyance of water, electricity, cable, and telecommunications. Cities are charged with the responsibility of managing the rights-of-way for the benefit of businesses and residents in their jurisdictions. Certainly, the public utility corridor and the facilities in the corridor increase the value of land used for businesses and homes in cities. Without streets for surface traffic, telecommunications, and other utilities, the value of the land and the benefits of living in a city would be greatly diminished.

When telecommunications firms place facilities in the public rights-of-way, cities incur real costs related to managing its rights-of-way. Cities have legitimate interests in avoiding unnecessary disruption caused by the laying of conduit along city rights-of-way and in recovering the costs it will actually incur when firms use its rights-of-way. Cities should address these concerns through an economically rational mechanism. Section 253(c) of the Telecommunications Act provides that state and local

governments can “require fair and reasonable compensation from telecommunications providers, on a competitively neutral and nondiscriminatory basis, for use of public rights-of-way on a nondiscriminatory basis.”⁷⁰ The only interpretation of fair and reasonable that promotes efficient competition is fees designed to recover the costs caused by telecommunications companies that use the public rights-of-way. Imposing costs on private firms that are not based on the costs that these firms impose on a city will hamper the abilities of firms to compete on their merits and deliver the benefits of competition.

When telecommunications firms access a municipality’s ROW, the municipality incurs management costs resulting from activities such as issuing permits, reviewing traffic control plans, inspecting construction sites, and updating city maps of utility facilities in the rights-of-way. Fees that exceed the actual costs of managing rights-of-way are an unnecessary burden and represent a substantial barrier to infrastructure investment. Access to the public rights-of-way is necessary for wireline firms to maintain their networks and implement innovative network upgrades. Fees for use of the public rights-of-way that are in excess of costs incurred by municipalities will unnecessarily increase a firm’s costs and decrease the value of entry and expansion, chilling investment. In the worst case, non-cost-based fees will deter network upgrades, facilities-based competition and the benefits of broadband access and applications. Even in the best cases, these costs will be passed on to customers, thereby counteracting the expected benefits from competition.

Fortunately, there is a growing recognition of the need for policy reforms in this area. Assistant Secretary of Commerce Mehlman recently stressed the importance of eliminating roadblocks posed by difficult rights-of-way, franchise fee, and historic preservation rules.⁷¹ At a recent forum sponsored by the Appraisal Institute, it was noted that “increased deployment of fiber lines for broadband and other uses has expedited need for rights-of way (ROW) fee reforms... Without significant changes to ROW policy, telecom businesses are looking at possibly billions of dollars in future expenses from new fees... which can “undermine the credibility of the process and jeopardize the build-out of new infrastructure.”⁷²

The NTIA should actively encourage and participate in efforts to remove these obstacles to infrastructure investment. It can foster efficient investment and innovation by working to establish guidelines for ROW fees based on actual costs and support legislation to enforce those guidelines by, for example, withholding federal subsidies to those cities not in compliance.

⁷⁰ TA96, Section 253 (c).

⁷¹ See Bruce Mehlman, Competitive Policy Institute.

⁷² “U.S. Needs to Reform Right-of-Way Policies, Officials Say,” TELECOM A.M., Vol. 7, No. 235, December 6, 2001.

Attachment A

Biography of Professor Robert G. Harris

Robert G. Harris is Professor Emeritus and former Chair of the Business and Public Policy Group at the Haas School of Business, University of California at Berkeley, and a Director at LECG, LLC. He has published more than 50 articles on antitrust, regulation, telecommunications, and transportation and has testified before Congress, the Federal Communications Commission, the Department of Justice, the Canadian Radio-TV Commission, and 27 state regulatory commissions on competition, interconnection pricing and costing in both wireline and wireless communications.

At the Haas School of Business, University of California at Berkeley, Professor Harris taught undergraduate, MBA and doctoral courses in managerial economics, business and public policy, industry analysis and competitive strategy, telecommunications economics, policy and strategy. Professor Harris also conducted original academic research on competition and regulatory policy, technological innovation, competitive strategy, telecommunications and transportation. He published this research in journals of business, economics, law, management and public policy.

A renowned authority in the information and communications industries, Professor Harris is a consultant to telecommunications service providers and equipment vendors on industry analysis and competitive strategy; technological innovation and new product introductions; mergers, acquisitions and corporate restructuring; market entry and competitive dynamics; price analysis and pricing models; cost models and costing; public policy analysis and advocacy. Professor Harris also has extensive expert witness experience before state and Federal courts in business litigation involving many other industries, including high technology manufacturing and software, for which Professor Harris conducted and supervised economic analyses of market structure and competitive dynamics; costs, prices and pricing practices; market entry and exit; mergers, acquisitions and restructuring; and technological innovation and adoption.

Professor Harris served as the Deputy Director of the Interstate Commerce Commission, where he played an instrumental role in the implementation of Congressional acts deregulating the railroad and motor carrier industries. Professor Harris has been a consultant to numerous government agencies, including the Interstate Commerce Commission, the Office of Technology Assessment, the US Department of Justice, the US Department of Transportation and the US General Accounting Office, on regulatory and public policy regarding the telecommunications and transportation industries.

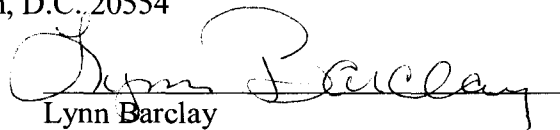
CERTIFICATE OF SERVICE

I do hereby certify that I have this 1st day of March, 2002 served the parties of record to this action with a copy of the foregoing BELLSOUTH'S COMMENTS by Electronic Mail and U.S. Mail addressed to the parties listed as follows:

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